

TRBOnet Dispatch Software Administration Guide

July 17, 2014

Table of Contents

Preface	8
About the Company	8
Contact Details	8
Copyright.....	8
Hardware and Software Requirements	9
System Architecture Overview	10
TRBOnet RadioServer and Consoles	10
MOTOTRBO Radio Systems	11
Conventional	11
IP Site Connect	11
Capacity Plus	12
Linked Capacity Plus	13
Connect Plus.....	14
IP Backend Network Requirements	15
Linked Capacity Plus Specific Requirements	15
TRBOnet RadioServer Installation	16
Installation Steps.....	16
TRBOnet RadioServer Configuration	17
License Information.....	17
License Types.....	17
Move TRBOnet Dispatch Software to Another Server PC.....	19
Use Spare Repeater	19
Dispatch Connections Limitations	19
License Manager	20
Install TRBOnet RadioServer Service	24
Create TRBOnet RadioServer Database.....	25
Database Authentication.....	26
Configure Network Parameters.....	28
Service Management.....	30
Automatic "Check Radio" Service	31
Location Service	31
System Planner Window	32
Advanced GPS Parameters	33
Telemetry Service.....	35

Text Messaging Service	35
Indoor Service	35
Advanced Settings	36
Map Servers for Geocoding	37
Local Agent	39
MOTOTRBO System Elements	41
Add a Control Station	42
Control Station Connection Modes	44
Single Station	44
Capacity Plus TRBOnet	45
Capacity Plus MOTOTRBO	46
IP Site Connect	47
Common Channel	48
Add a MOTORBO Repeater	49
MNIS Data Service	51
DDMS Service	52
Repeater's Advanced Settings	53
Privacy	54
Slots	55
Local Slots	56
Audio Path	57
Add TRBOnet.Swift Agent	58
TRBOnet.Swift Agent's Advanced Settings	60
Reserve Agent	61
Add XRC-9000 Controller	62
Advanced Settings	64
Add XRT-9000 Controller	65
Audio Paths	67
Add a Selex Repeater	68
Selex Repeater Advanced Settings	70
Selex Repeater Slots	71
Analog Mode	72
Services	73
Analog Control Stations	75
Add an Analog Control Station	76
Serial Port	78

Remote Agents	79
Friendly Servers	81
External PBX Server	83
Advanced Settings	84
Data Sources	85
COM Ports	86
TCP/IP	88
Email Settings	90
POP3 Server	91
SMTP Server	92
SMS Settings	93
Administrator Activity in the Dispatch Console	95
Dispatch Console Menu	95
File	96
View	98
Map	109
Map Types	112
Tools	117
Options	122
Sound	122
Map	123
Coverage Map	124
Hardware	126
Advanced	128
Volume	131
Alarm	132
Set Language	133
Change Password	133
Help	133
Route Management	134
Radio Allocation	145
Beacons	147
Administration	150
RadioServer	150
Database	151
Radio Systems	152

Radio Systems Properties	153
System Bridging	159
System Bridging Types	162
Phone Calls	166
Outgoing Calls Configuration	167
Incoming Calls Configuration	168
Tasks	170
Agenda	170
Audio Recorder for NetCRR	172
Import Beacon Data from DB «Firebird»	174
Export Data	176
Geofencing	181
Idle Time	186
Lone Worker	188
Radio Allocation (Sprite Forms)	198
Scheduled Task	200
SMS and Email Notifications	204
User Activity	208
Voice Message	211
Event/Alarm Management	217
Telemetry	224
Radio Groups Telemetry	225
Telemetry #N	230
Tools	231
Swift.Tracker Configuration Tool	231
Templates for Extended Messages	239
Indoor 2D Map Converter	244
Disabled Radios	246
Dispatchers	248
Email Groups	253
SMS Groups	255
Users	257
Logical Groups	262
Radio Groups	265
Radios	267
Configuring Job Ticketing	275

Installing Web-Console.....	282
Installing Web Console	282
Web Console Setup	293
Appendix A: MS SQL Server Edition Considerations	296
Appendix B: Configure MS SQL Server 2012 for Local System Account During Setup	297
Appendix C: Grant Sysadmin Role to Local System Account in Installed MS SQL Server 2012	300
Appendix D: Database and Audio Recordings Backup and Restore	303
Backup Configuration	303
Backup Database and Audio Recordings	305
Restore Database	309
Restore Audio Recordings	315
Schedule Backups.....	318
Appendix E: Swift.Tracker Option Board Configuration	320
Option Board Support in Radio's Code plug	321
Add TRBOnet Firmware in MOTOTRBO GOB Loader.....	322
Enable Swift.Tracker in TRBOnet RadioServer.....	325
Appendix F: SIP Setup for Motorola Phone System.....	326
TRBOnet RadioServer Configuration	326
Programming Radios	328
Appendix G: NAI VOICE & DATA Support	330
Software Requirements.....	330
Hardware Requirements	330
Voice and Data Flow 1.....	331
Voice and Data Flow 2.....	332
Single PC Installation	332
Client-Server Installation	333
IMPORTANT.....	334
Limitations.....	334
Radio Subscriber Configuration.....	335
Network Settings.....	335
Personality Settings – 1	335
Personality Settings – 2	336
MNIS and DDMS Settings	336
General Settings	336
Talk Group Settings	337
Master Repeater Settings.....	337

LCP Sites Settings.....	338
Advanced Settings	338
Network Settings	339
DDMS Settings.....	339
ARS TRBOnet Settings	340
LCP Repeater Settings	341
Audio Paths	342
Appendix I: Backup Server.....	343
TRBOnet Backup Server Configuration.....	344
Passive Reserve Mode.....	345
Active Reserve Mode.....	345
Restrictions for Active Reserve Mode	345
Dispatch Console Configuration	347
Console Connection to Main and Backup Servers	348

Preface

This document is intended for all TRBOnet Administrators to install, upgrade and configure the system. It describes system requirements, prerequisite software, installation and configuration process of TRBOnet RadioServer and Dispatch console.

About the Company

Neocom Software, Ltd was created in 2007 on the basis of Neocom, Ltd., which was founded in 1997 and is the famous supplier of radio communication systems for professional or license-free use on the ground, seas or rivers.

Today, Neocom Software has Motorola Application Partner status in EMEA, Latin America and the Asia Pacific region, and Motorola Application Provider status in North America.

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EMEA	+7 812 45 70 893	
APAC	+7 812 45 70 893	

Copyright

Intellectual property rights protect the voice coding Technology embodied in this product including patent rights, copyrights and trade secrets of Digital Voice Systems, Inc. This voice coding technology is licensed solely for use within this Communications Equipment. U.S. Pat. Nos. 6,199,037, 5,870,405, 5,754,974, 5,664,051, 5,630,011, 5,517,511, 5,491,772, 5,247,579, 5,226,108, 5,226,084, 5,216,747 and 5,081,681.

Hardware and Software Requirements

TRBOnet RadioServer/Agent with IP connection only					
Voice Channels	4	8	16	24	24+
CPU	Intel Core i3	Intel Core i5	Intel Core i7, 4 Cores	Intel Core i7, 6 Cores	Contact technical support
Memory	2 GB	4 GB	4 GB	8 GB	
HDD	300 MB for installation files, +1 MB per 1 minute of voice recording				
Sound Card	No				
Supported OS	Windows 7, Windows 8, Windows Server 2008, Windows Server 2012				
Software	.NET Framework 4.0, MS SQL Server 2008 Express Edition or higher				

TRBOnet RadioServer /Agent with Control Stations	
Control Stations	1 2+
CPU	Intel Core i5
Memory	2 GB
HDD	300 MB for installation files, +1 MB per 1 minute of voice recording
Sound Card	Multi-channel Sound Card required. Recommended: 1. M-Audio Delta 1010 LT 2. Roland OCTA CAPTURE Hi-SPEED USB Audio Capture
Additional Devices	Cable connector Motorola PMKN4016
Supported OS	Windows 7, Windows 8
Software	.NET Framework 4.0, MS SQL Server 2008 Express Edition or higher

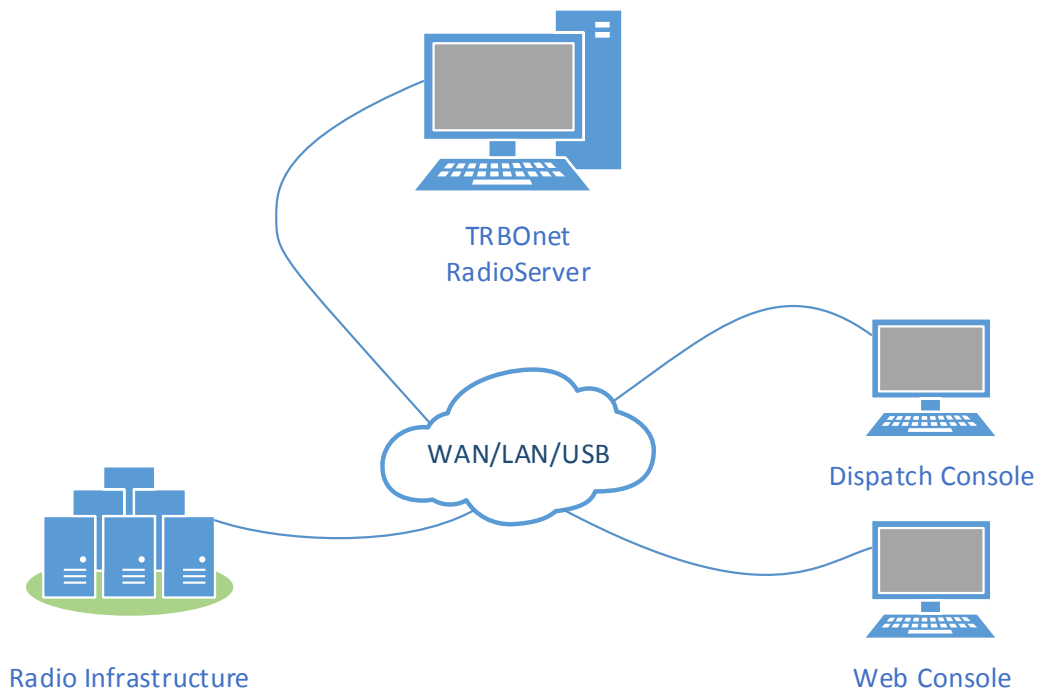
Dispatch Console	
CPU	Intel Core i3
Memory	4 GB
HDD	70 MB for installation files
Sound Card	Yes
Display	1280x1024 minimal resolution, 1600x900 recommended resolution
Additional Devices	Speakers and microphone or headset. Imtradex devices are recommended.
Supported OS	Windows 7, Windows 8
Software	.NET Framework 4.0

System Architecture Overview

TRBOnet RadioServer and Consoles

TRBOnet Dispatch Software is a PC-based voice-dispatch and AVL software application for the MOTOTRBO™ Professional Digital Two-Way Radio System.

The software has client-server architecture: TRBOnet RadioServer runs as a Windows service on the server machine, stores data in MS SQL database and allows client connections from Web Console and Dispatch Console. In addition, remote software and/or hardware agents can be connected to provide voice and data from remote sites.



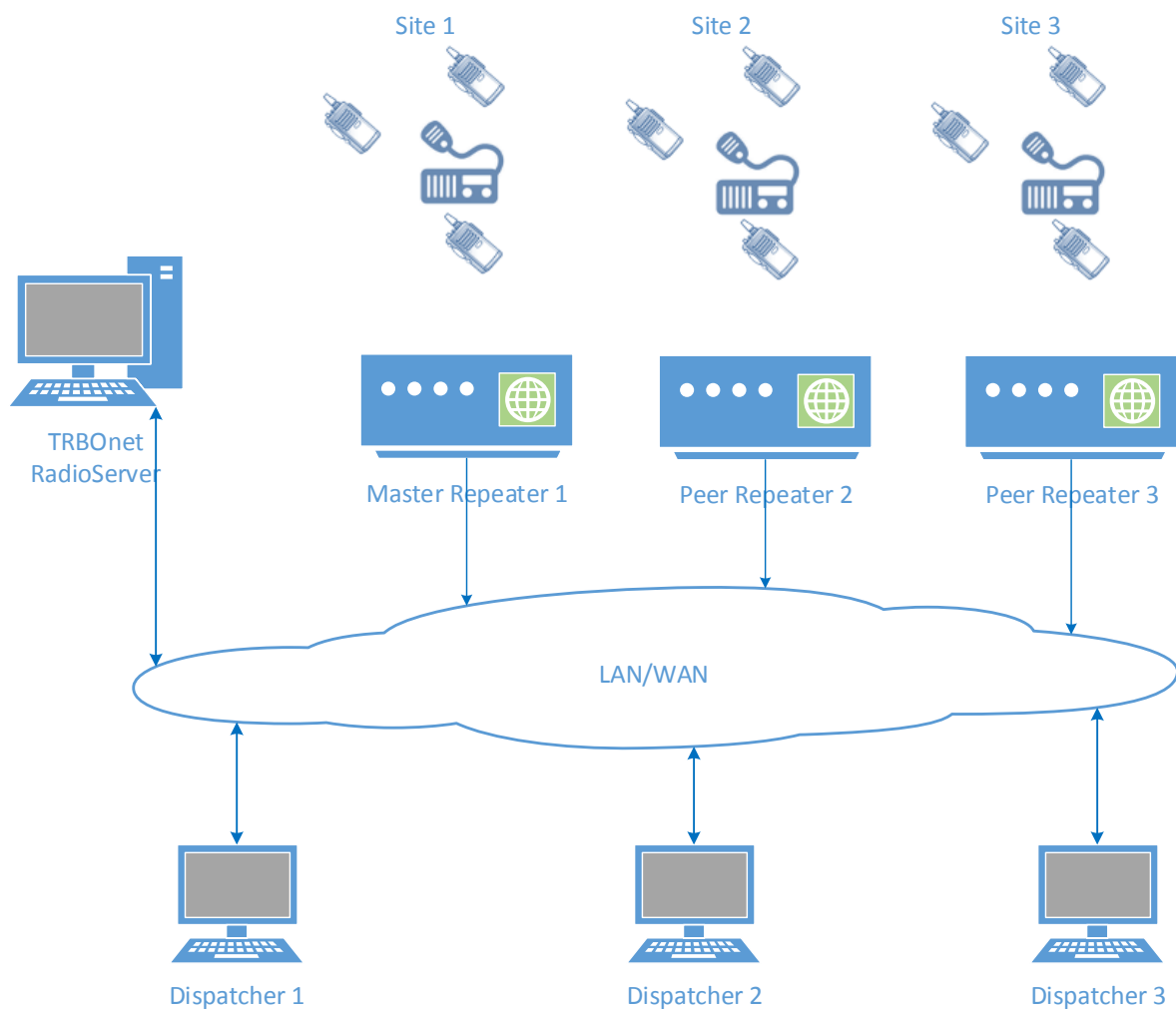
MOTOTRBO Radio Systems

Conventional

Conventional System is conventional two-way MOTOTRBO system that allows you to transmit Voice and Data via conventional channel. Radio groups and subscribers are assigned to a radio channel. Users can select the channel but not system.

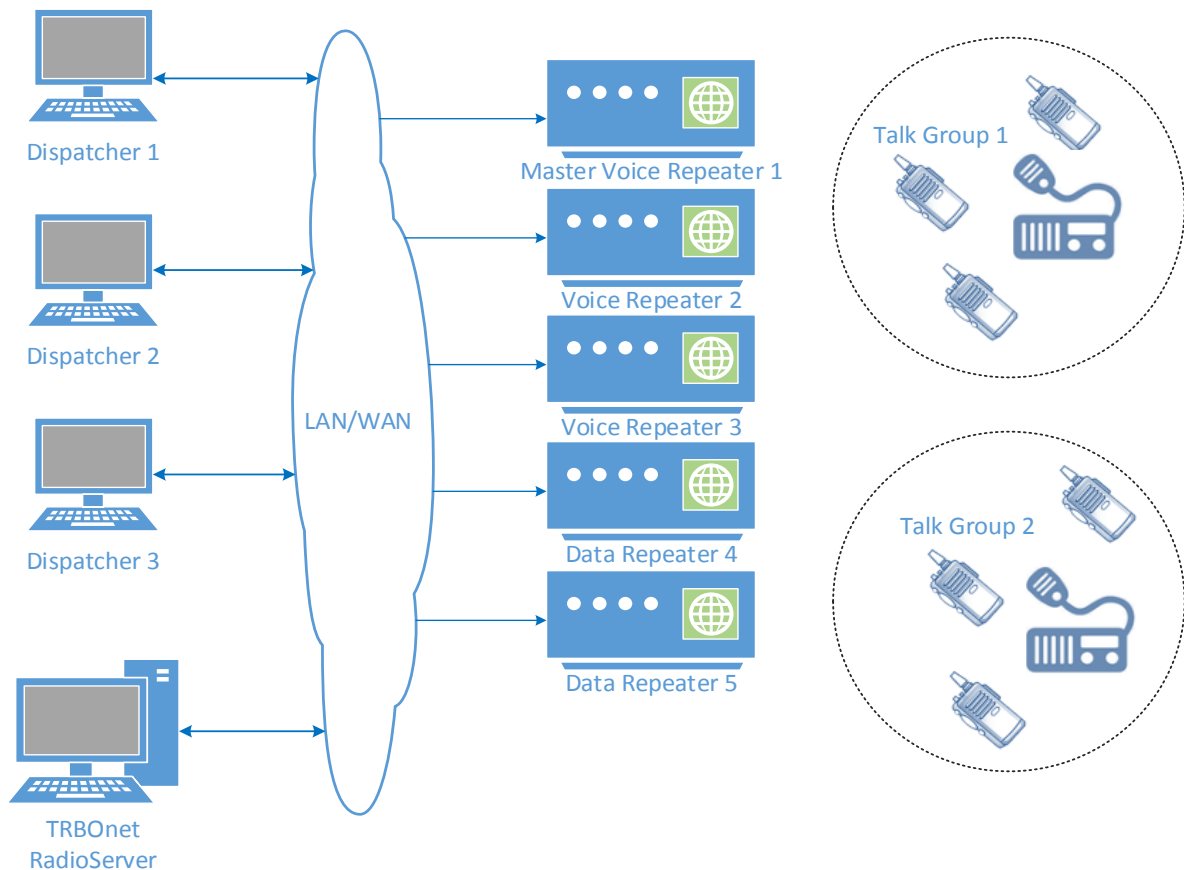
IP Site Connect

IPSC is a digital conventional two-way MOTOTRBO system that allows you to extend the area of your communication providing two wide area channels. It is possible to connect up to 15 repeaters (each geographical location of a repeater is called "site") to one system using IP connection. It allows you to broaden the coverage zone for voice and data transmissions. The main objective of IPSC systems is to provide stable connection between subscribers and control centers regardless distance issues.



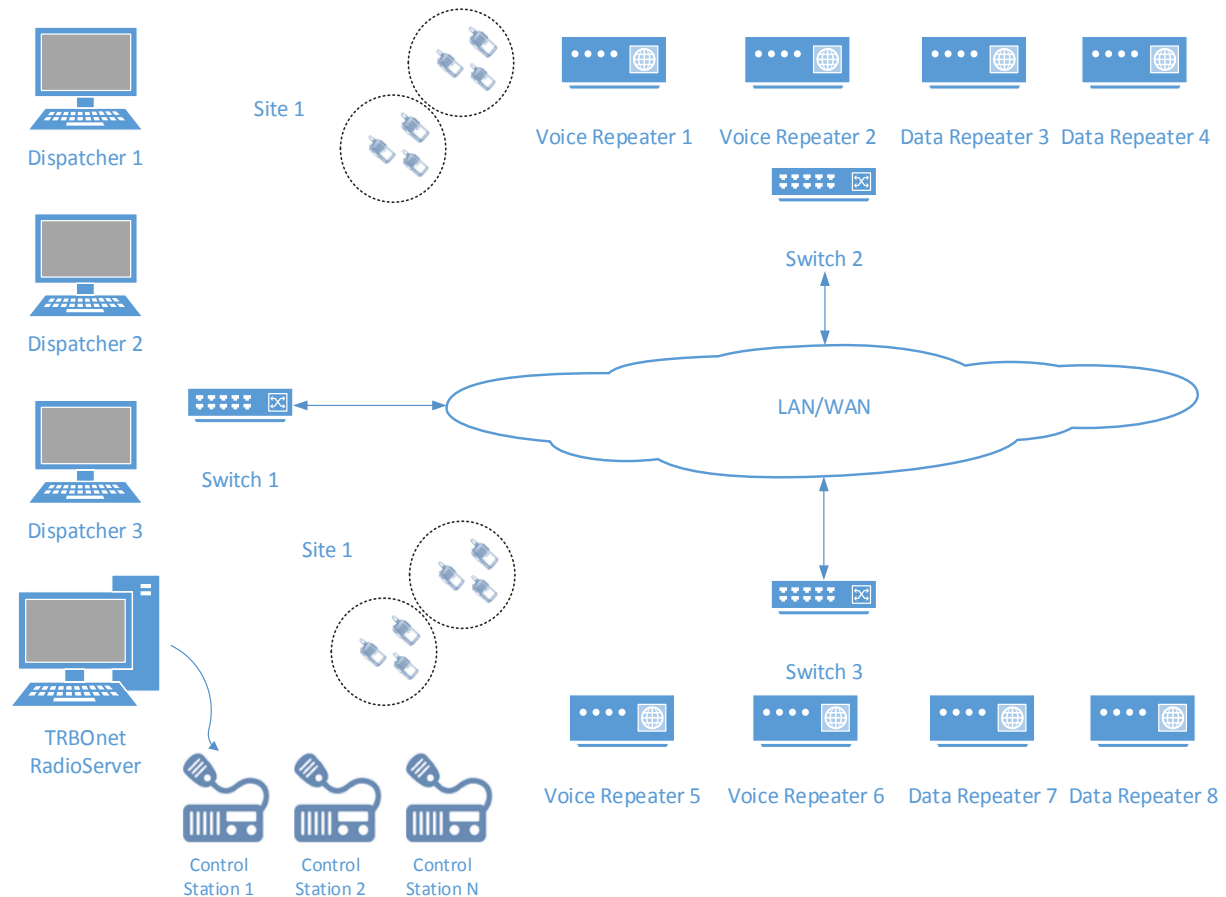
Capacity Plus

Capacity Plus is a digital trunk two-way MOTOTRBO system that allows you to accommodate the high volume communication. It is designed to organize stable connection in a few groups within one building or a set of buildings. This system type allows you to increase the number of channels for voice and data transmission between the subscribers and control centers. The subscribers are always automatically forwarded to a free channel. The main objective of Cap+ is to support more simultaneous voice and data transmissions within one capacious system.



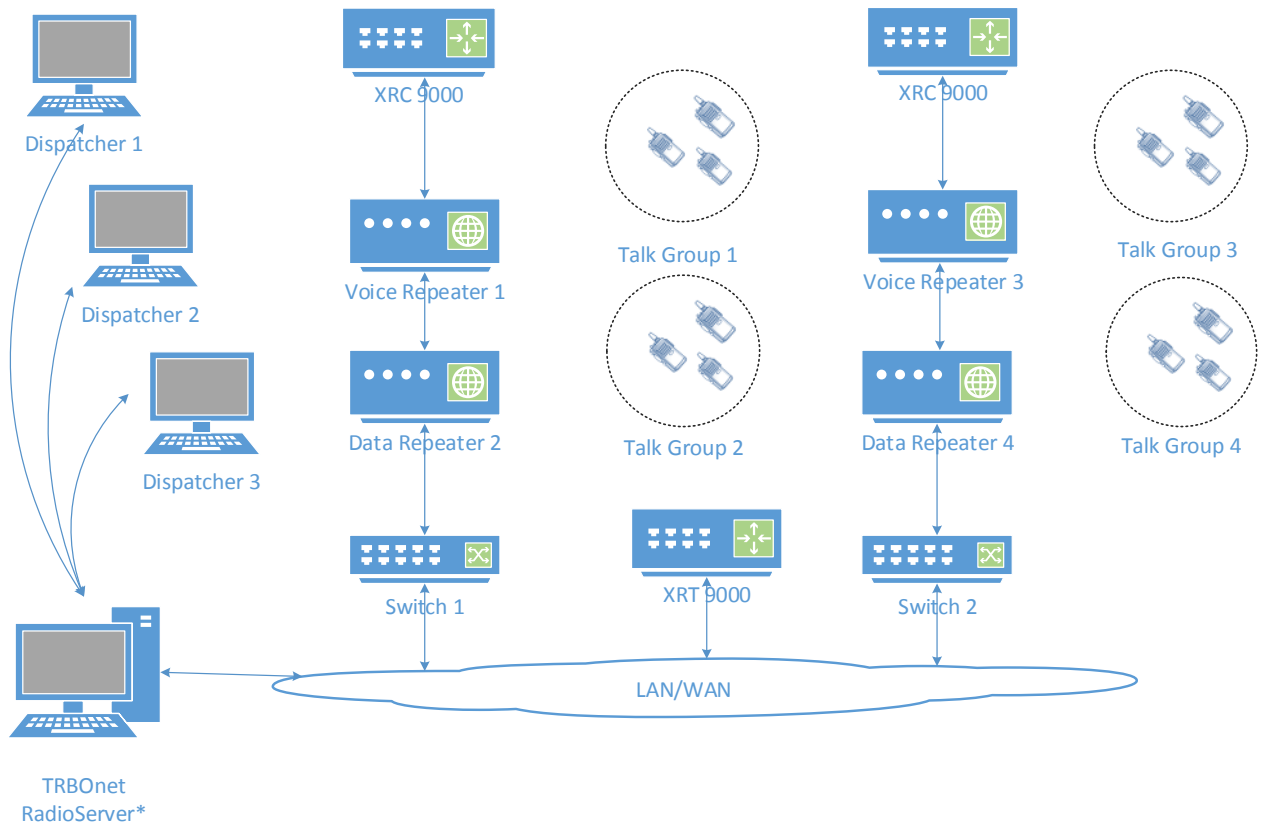
Linked Capacity Plus

Linked Capacity Plus is a multi-site digital trunk two way MOTOTRBO system that enables you to accommodate the high volume and wide area communication that is required for your business allowing you to connect via IP up to 15 single Linked Capacity Plus sites located in one place or in separated territories. This system type allows you to broaden the coverage zone and the number of channels for voice and data transmission between the subscribers and control centers. The main objective of Linked Cap+ is to support more simultaneous voice and data transmissions regardless distance issues.



Connect Plus

Connect Plus is a multi-site digital trunk two-way MOTOTRBO system that enables you to accommodate the high volume, wide area communication that's required for your business allowing you to connect via IP multiple sites located in one place or in separated territories. This system type allows you to broaden the coverage zone and the number of channels for voice and data transmission between the subscribers and control centers. The subscribers are always automatically forwarded to the control channel. The main objective of Connect Plus is to support more simultaneous voice and data transmissions regardless distance issues and to provide more structural addressing of those transmissions provided by XRC and XRT controllers.



IP Backend Network Requirements

Before planning any IP connected MOTOTRBO systems read System Planner (chapter “4.6.3.2 Characteristics of Backend Network” for November 2013 edition)

- **Delay/Latency** is characterized as the amount of time it takes for voice to leave the source repeater and reach the destination repeater. Delay should be less than 60 ms. It can be up to 90 ms, but requires changes in CPS for subscriber units and for repeaters.
- **Jitter** is the variation of packet inter-arrival time. It should be less than 60 ms.
- **Packet Loss**. In the case of voice, the ongoing call ends if six consecutive packets do not arrive within 60 ms. of their expected arrival time. In the case of data, the repeater waits for the expected number of packets (as per the data header) before ending the call.
- **Bandwidth**. Refer to System Planner for bandwidth calculations, but roughly, it requires 96 kbps for each repeater connection and should be summarized for all repeaters.

If the IP backend network does not satisfy MOTOTRBO requirements, it will degrade audio quality significantly up to dropped voice calls.

Linked Capacity Plus Specific Requirements

- **Proxy server** - The network cannot use a Proxy server that directs all IP devices to a home or logon page before they are allowed access to the WAN.
- **Addresses and Ports** - A static IP Address and UDP Port for the master repeater must be made available to all peer devices on the Linked Capacity Plus system.

When a peer device registers with the master repeater, the network supplies the return IP address and UDP port of the peer device to the master repeater. The IP address and UDP port must then be made available to all other MOTOTRBO™ LCP devices on the system.

TRBOnet RadioServer Installation

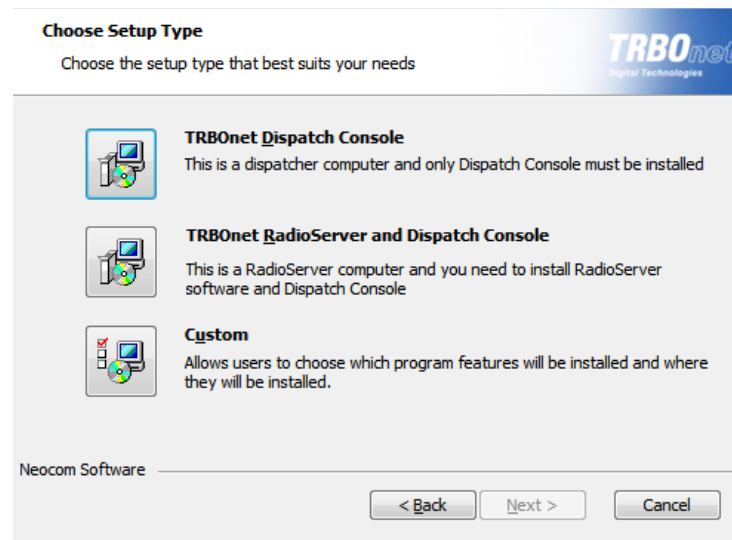
Note: Administrative privileges are necessary to install TRBOnet RadioServer. The TRBOnet RadioServer Service must also be run under an account with the administrative privileges. If necessary, create a new administrative user account to run TRBOnet RadioServer Service.

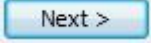
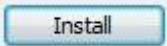
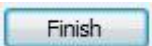
Installation Steps

Double-click the **TRBOnet Dispatch Software _vX.X.exe** file to run the TRBOnet Dispatch Software setup.

Click  button to continue. Click «**I accept the terms in the License Agreement**».

Select installation type:




1. Select **TRBOnet RadioServer** and **Dispatch Console** to install TRBOnet RadioServer and TRBOnet Dispatch Console.
2. Click  button to continue the installation.
3. TRBOnet Dispatch Software is ready to install.
4. Click  button to install the software.
5. After installation completes, click  button to exit the installation wizard.

TRBOnet RadioServer Configuration

TRBOnet provides **TRBOnet RadioServer Configurator** tool to customize TRBOnet RadioServer parameters. To open **TRBOnet RadioServer Configurator** do the following:



- Use  shortcut on the desktop;
- or
- Go to Start menu and select for TRBOnet.Enterprise:
 - ✓ **All Programs/Neocom Software/TRBOnet.Enterprise/ TRBOnet RadioServer vX.X.**
 - For TRBOnet.Plus:
 - ✓ **All Programs/Neocom Software/TRBOnet.Plus/ TRBOnet RadioServer vX.X.**

License Information

To use TRBOnet Dispatch Software you need to purchase a license.

License Types

For TRBOnet Dispatch Software available 3 (tree) license types:

License Type	Demo	Trial	Commerce
Validity	2 months	By Request	According to Customer order
Quantity of Control Stations and Subscriber Units	2 Control Stations, 10 Subscriber Units	By Request	According to Customer order
Features	All features available	All requested features available	According to Customer order
How to obtain	Delivered with installation package. The default license when installing is Demo license.	Assigned to server Hardware ID. For more details on Hardware ID see the article .	<ol style="list-style-type: none"> 1. Assigned to server Hardware ID. For more details on Hardware ID see the article. 2. Assigned to Control Stations and/or Repeaters serial numbers from Control Station CodePlug (do not use serial numbers marked on device body).

For more details on license and update contact our technical support info@trbonet.com

To see your license assigned to Hardware ID or Control Stations and/or Repeaters serial numbers open the INFO file delivered with license file in the Notepad:

```
License ID: 3b5a0af8-b8a1-4a66-9089-966509f055a6
License generated by: s.kononov
License generation date: 2/17/2014
The Update subscription is active up to: 2/17/2015
Product: TRBOnet_Enterprise (4.0.0.138)
License for: Neocom Software Ltd

Server limitations
Server hardware keys: 3CA3-52FB-595C-CA60-5EBB
Remote Agent connections: 0

Agent limitations
Agent hardware keys: Any
Number of master radios or master repeaters: 10
Master radios / master repeaters serial numbers: Unlimited
Total number of peers in IP Site Connect or Capacity Plus systems: Unlimited
Serial numbers of peers used in IP Site Connect or Capacity Plus systems: Unlimited

Limitation for Client connections
Remote Dispatch connections: Unlimited
Number of Remote Dispatch accounts: Unlimited

Subscriber radios limitations
Number of subscriber radios: 10

List of available features
```

1 – Your license assigned to the Hardware ID

2 - Your license assigned to Control Stations and/or Repeaters serial numbers.

Move TRBOnet Dispatch Software to Another Server PC

In case you need to use TRBOnet Dispatch Software on another server PC or you have reinstalled OS do the following:

1. Your license assigned to Hardware ID. Send old license file and new Hardware ID to TRBOnet technical support (info@trbonet.com). See the [article](#) to obtain new Hardware ID.

Note: Hardware ID is a unique PC ID, based on CPU and OS data, so you cannot use TRBOnet Dispatch Software on another server by copying license file from one PC to another.

2. Your license assigned to Control Stations serial numbers. You can move TRBOnet Dispatch Software to another PC using the same Control Stations and Repeaters. In case you are going to use another devices send old license file and new Control Stations serial numbers from Control Station CodePlug to TRBOnet technical support (info@trbonet.com). Do not use serial numbers marked on device body.

Use Spare Repeater

In case you are going to use spare repeaters, e.g. to replace a broken repeater you need to mention it when purchasing a license.

E.g. you have 3 repeaters to use with TRBOnet Dispatch Software and 1 spare repeater.

Mention repeaters limitations: 3 and send to technical support 4 repeaters serial numbers (including spare repeater serial number).

Dispatch Connections Limitations

When purchasing a license mention a number of Dispatch Connections you are going to use.

Dispatch Connections number consists from:

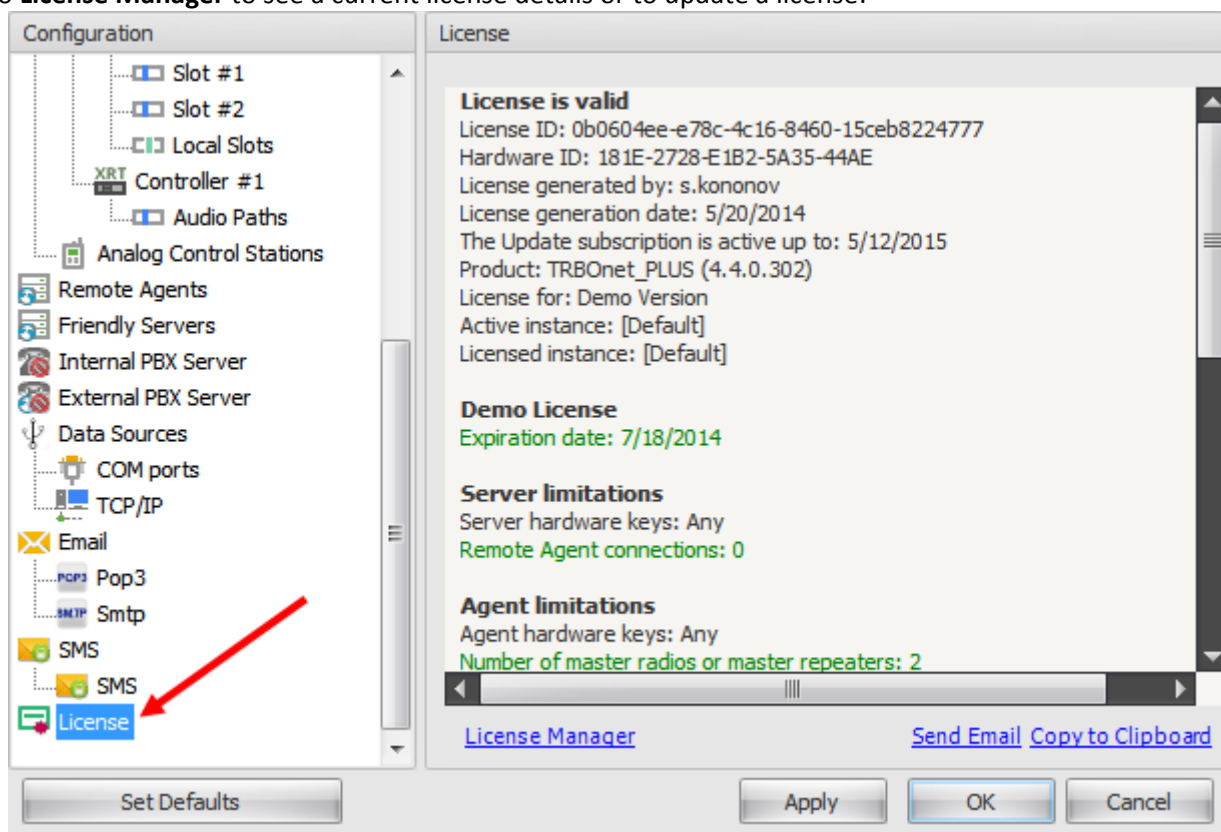
1. Dispatch Consoles number;
2. Web Consoles number;
3. API Connections number.

E.g. if you are going to use 5 Dispatch Consoles and 3 Web Consoles you should mention 8 (5+3) Dispatch Connections when purchasing a license.

For more details on license and update contact our technical support info@trbonet.com.

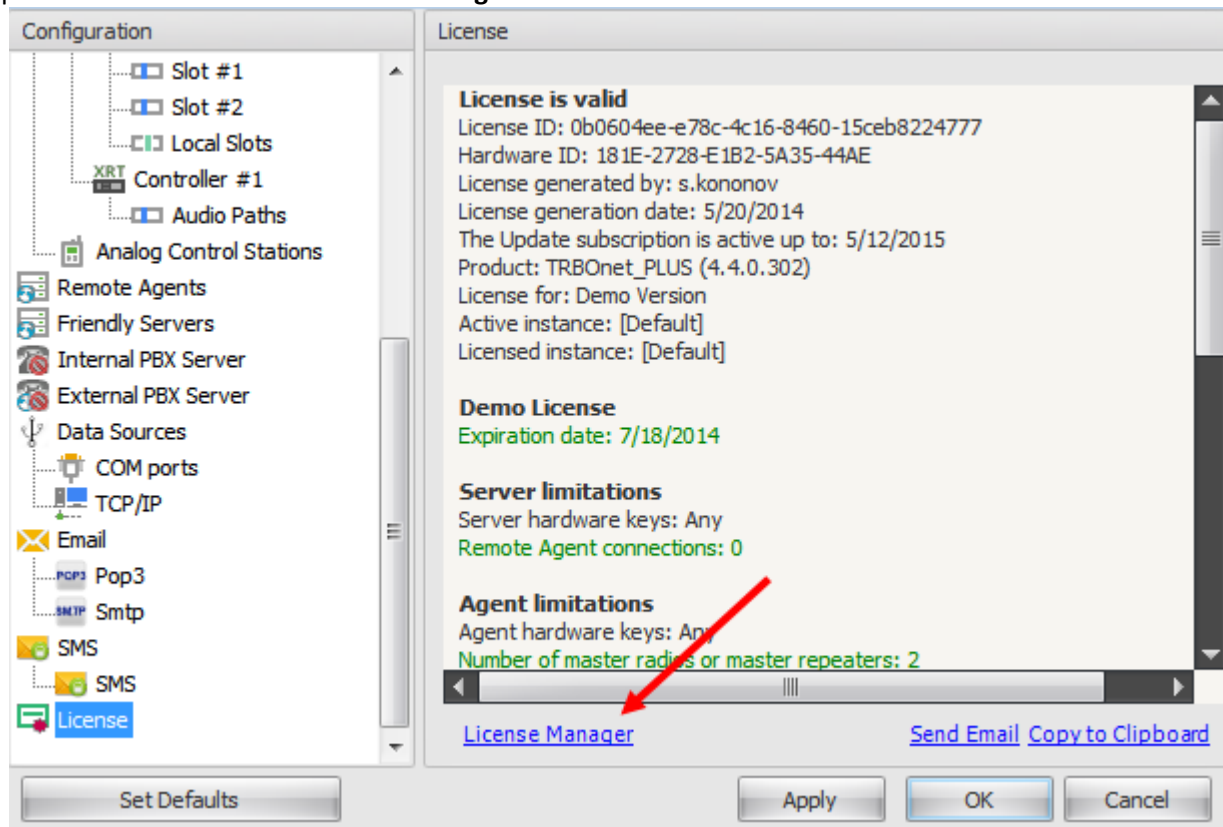
License Manager

Go to **License Manager** to see a current license details or to update a license:

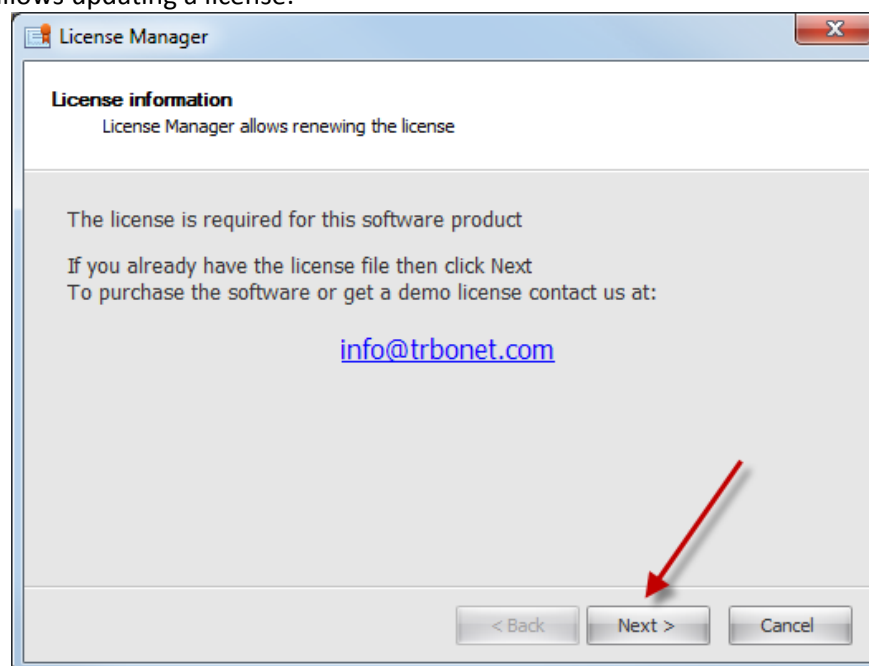


Before start to work, check that your license is not expired. If you have a commercial license or would like to update you current license with extended demo license you can update it.

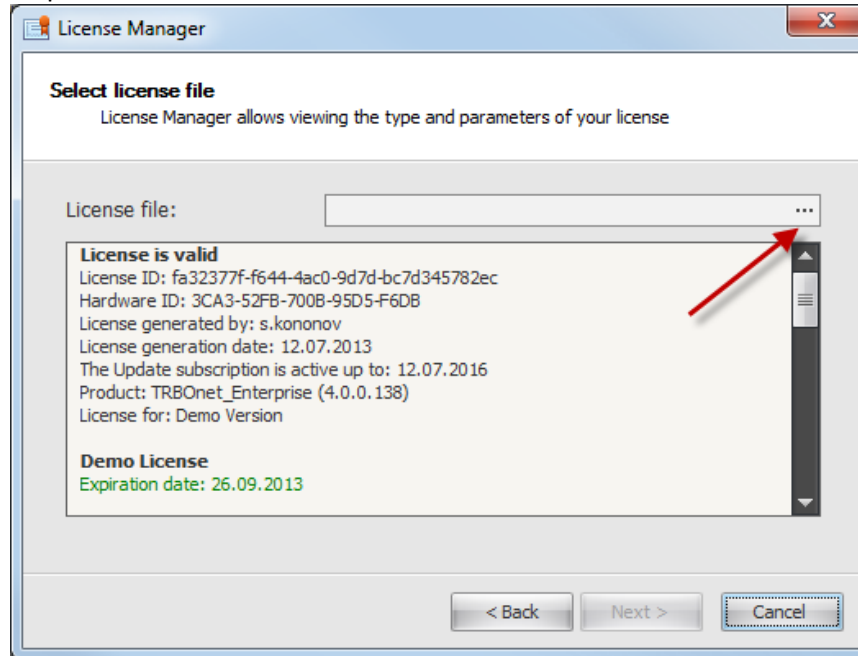
To update current license use **License Manager** in **License** node of left tree:



License Manager allows updating a license:

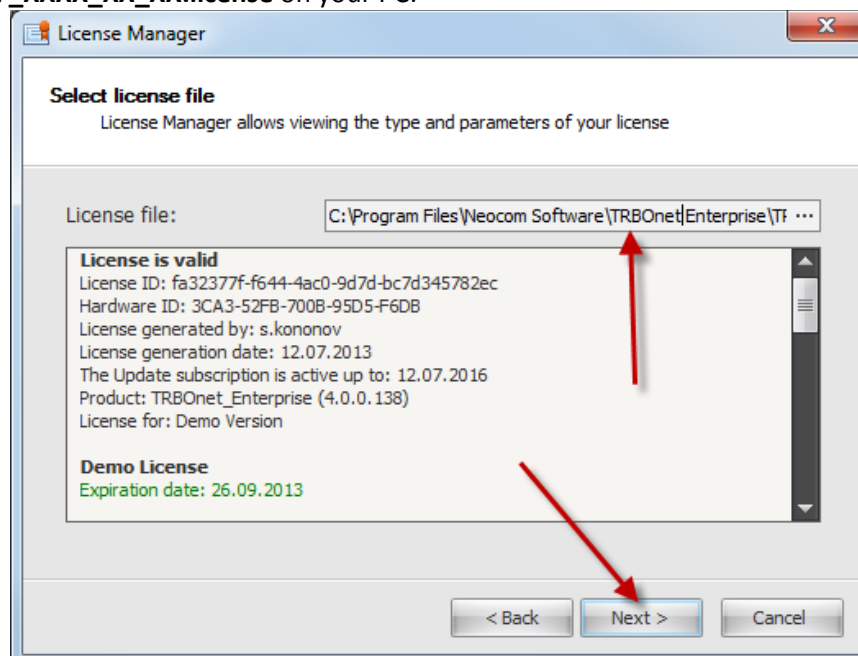


Browse license file to update:

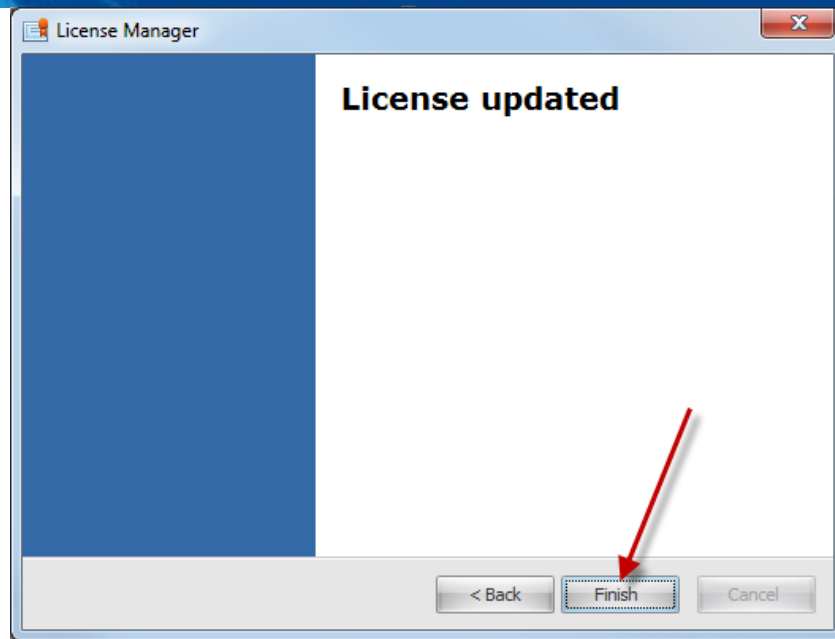


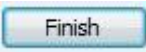
Browse to a new license file.

Select file **TRBOnet_XXXX_XX_XX.license** on your PC:



Click  button to continue.



Click  button to close License Manager.

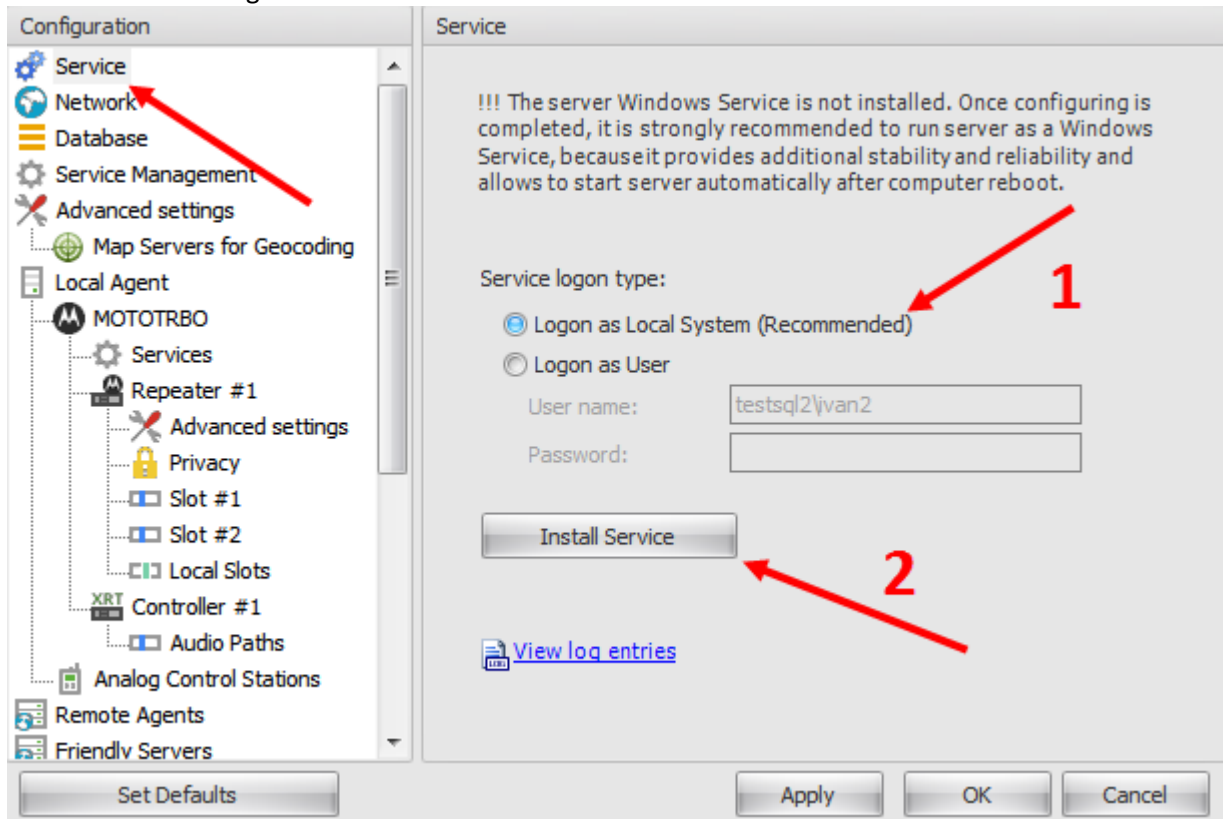
Note: delete all previous licenses files before using.

Install TRBOnet RadioServer Service

Note: TRBOnet RadioServer is running as a Windows service. To guarantee stable work User Account Control should be configured to not display notifications and require user authorization to run service in Windows Control Panel:

Control Panel\User Accounts and Family Safety\User Accounts - , Change User Account Control Settings -, move slider to the down position **"Never notify"**. Click **"Ok"** button, restart the PC.

Select **Service** in the navigation tree:



TRBOnet Dispatch Software allows two types of accounts to run service:

Local System (1) - system account with local system administrator privileges to run the service as Windows service (Recommended);

User - account created manually to run the service as Windows service. Should be able to run services in Windows OS, to have read and write access to **Neocom Software** folders in **"%ProgramFiles%"** and **"%ProgramData%"** folders. Required in following cases:

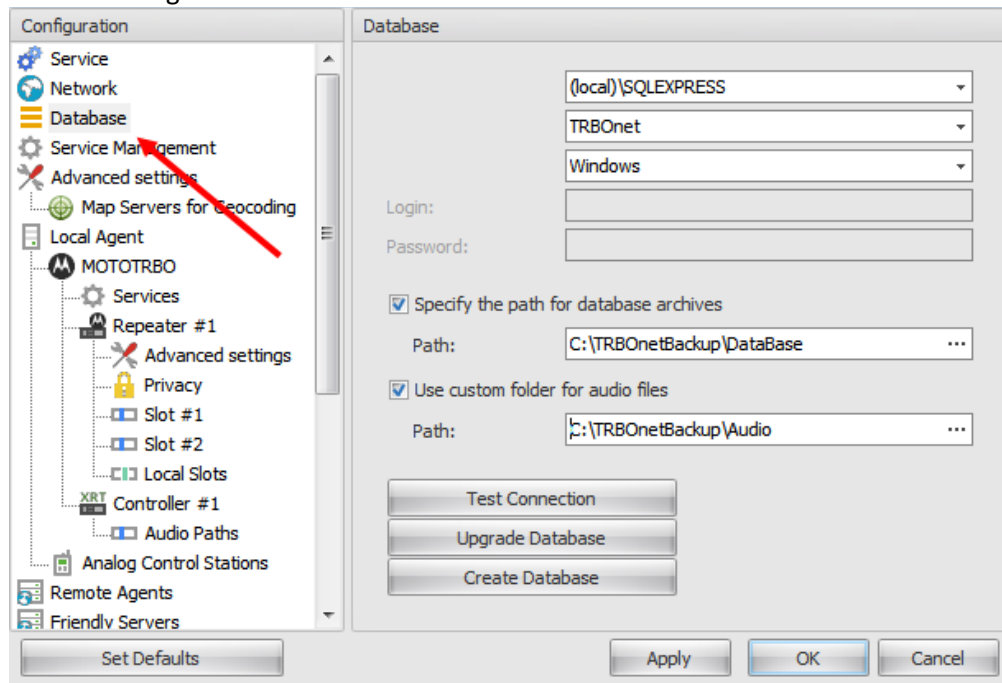
1. Active Directory Domain network is used and current Windows user is not allowed to use **Local System** account to launch services on the local PC according to domain policy.
2. MS SQL Server is installed on the remote PC and **Windows Authentication** is required to connect to database.

Select logon type and click **«Install Service»** button (2).

Then click **«Start Service»** button.

Create TRBOnet RadioServer Database

Select **Database** in the navigation tree:



Specify the following parameters:

- **SQL Server** - specify SQL Server name and instance ((local)\SQLEXPRESS instance is set by default);
- **Database** - specify database name (TRBOnet is set by default);
- **Authentication** - select Windows or SQL Server Authentication See [Database Authentication](#) section
- Specify **Login** and **Password** for **SQL Server Authentication**;
- Select custom folder for database archives (e. g. **C:\TRBOnetBackup\DB**);
- Select custom folder for audio files (e. g. **C:\TRBOnetBackup\Audio**).

Note: When paths for database archives and custom folder for audio files are not specified, TRBOnet RadioServer uses default paths. For TRBOnet.Enterprise use the following default path:

%ProgramData%\Neocom Software\TRBOnet.Enterprise\Backups - default path for database archives.

%ProgramData%\Neocom Software\TRBOnet.Enterprise\Audio - default path for audio.

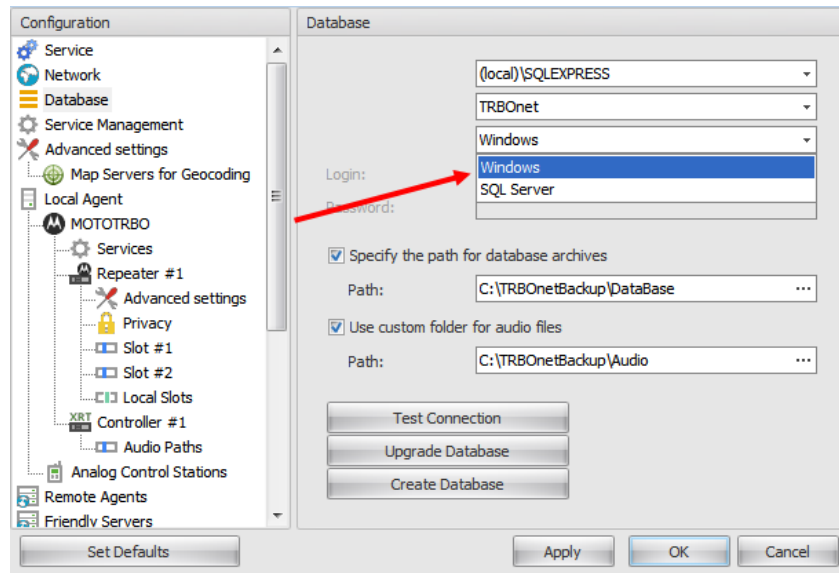
For TRBOnet.Plus use the following default path:

%ProgramData%\Neocom Software\TRBOnet.Plus\Backups - default path for database archives.

%ProgramData%\Neocom Software\TRBOnet.Plus\Audio - default path for audio.

Database Authentication

To connect to SQL Server using **Windows Authentication** is recommended when SQL Server is installed on the local PC:

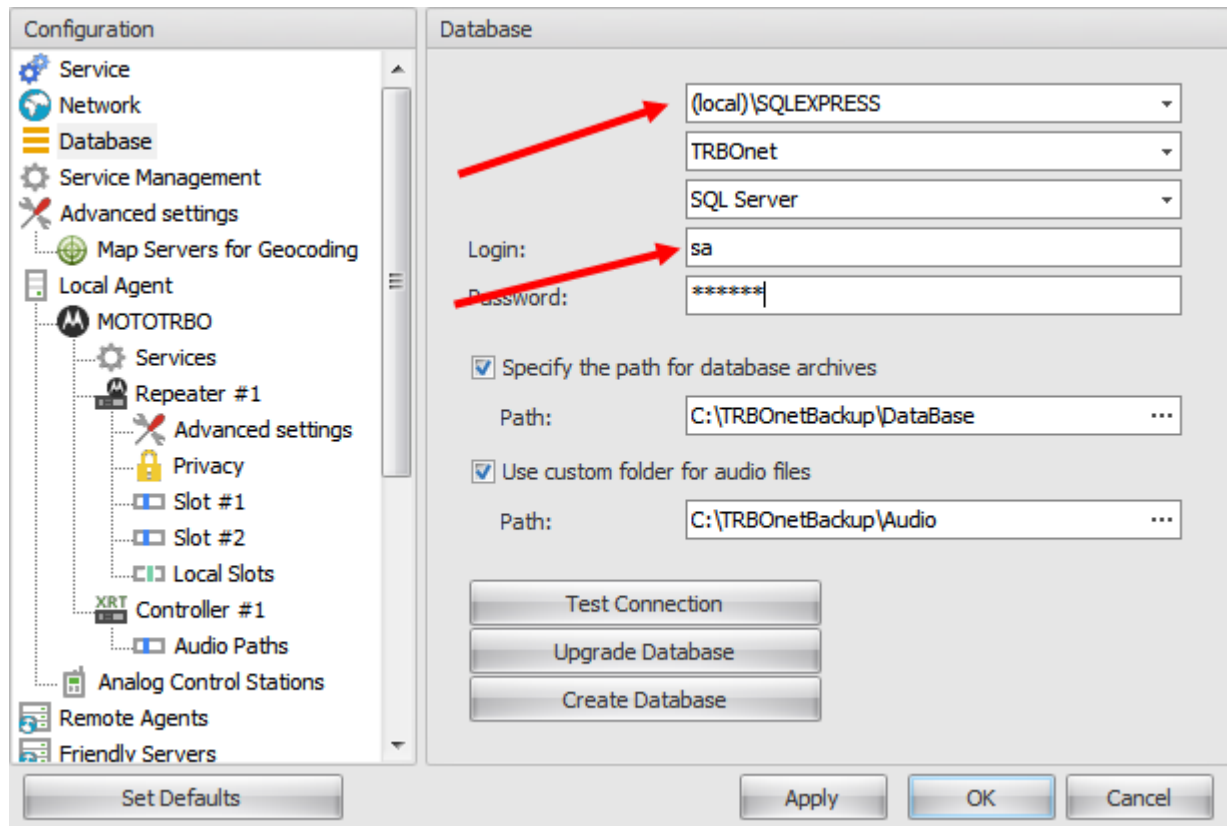


To provide access privilege for TRBOnet RadioServer to connect to SQL Server create an account with **sysadmin** privileges.

During the installation process, MS SQL Server 2008 automatically assigns **sysadmin** privileges to **NT Authority\SYSTEM** account.

In case of MS SQL Server 2012 add **NT Authority\SYSTEM** account in the Administrators list during the installation process. As soon as DB owner privileges are required to work with TRBOnet Database, you need to grant **sysadmin** role to a **Local System** account. To configure MS SQL Server 2012 during installation see [Appendix B](#). To configure preinstalled MS SQL Server 2012 see [Appendix C](#).

To connect to SQL Server using **SQL Server Authentication** is recommended when SQL Server is installed on the remote PC:



Configuration

- Service
- Network
- Database
- Service Management
- Advanced settings
- Map Servers for Geocoding
- Local Agent
 - MOTOTRBO
 - Services
 - Repeater #1
 - Advanced settings
 - Privacy
 - Slot #1
 - Slot #2
 - Local Slots
 - Controller #1
 - Audio Paths
 - Analog Control Stations
 - Remote Agents
 - Friendly Servers

Database

Server: (local)\SQLEXPRESS

Database: TRBOnet

SQL Server

Login: sa

Password: *****

☒ Specify the path for database archives

Path: C:\TRBOnetBackup\DataBase ...

☒ Use custom folder for audio files

Path: C:\TRBOnetBackup\Audio ...

Test Connection

Upgrade Database

Create Database

Set Defaults

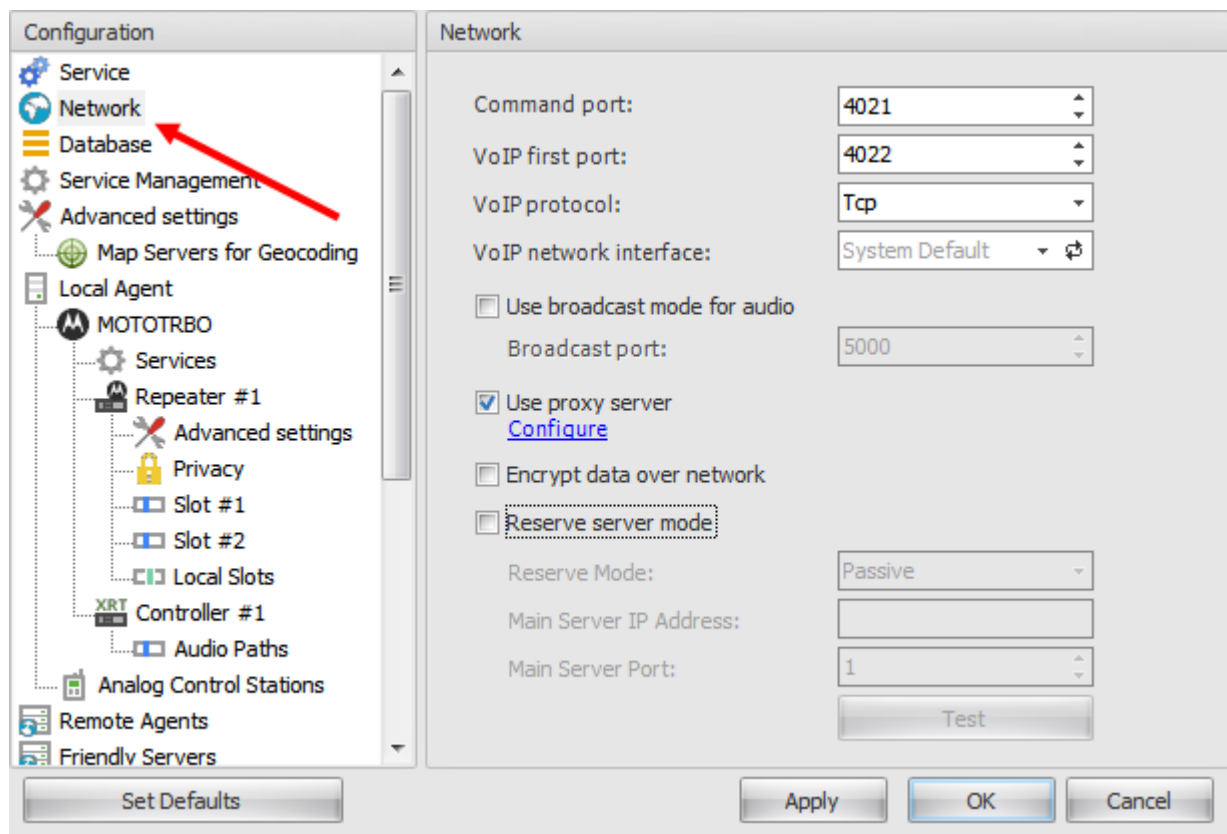
Apply

OK

Cancel


To connect to SQL Server using **SQL Server Authentication** create SQL Login with **sysadmin** privileges in SQL Server in use. For detailed instruction how to create SQL Login please follow official manual tab: <http://technet.microsoft.com/en-us/library/aa337562.aspx>

Configure Network Parameters

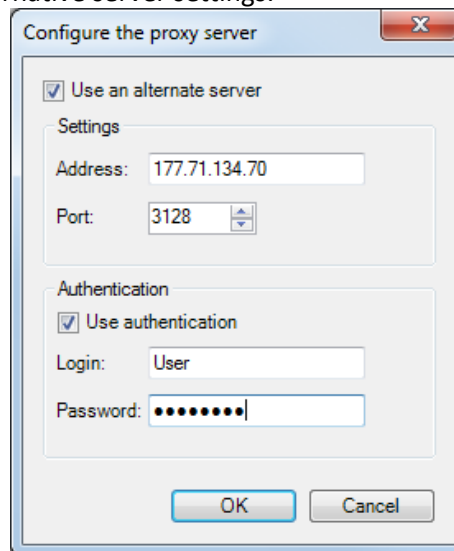


To configure network parameters select **Network** in the navigation tree:

Configure the following parameters:

- **Command port** - port to connect by Dispatch Console. Specify command port (4021 set by default);
- **VoIP first port** - port for audio communication. Specify VoIP first port (4022 set by default). Each additional Dispatch Console will create connection to next port;
- **VoIP protocol** - select VoIP protocol type (TCP set by default);
 - **All** - TCP will be used first, if not possible - UDP will be used;
 - **TCP** - slower, but more stable;
 - **UDP** - faster, packets can be dropped, some providers drop UDP packets.
- **VoIP network interface** - specify VoIP network interface in the dropdown list. Click  button to refresh the list of network interfaces;
- **Use broadcast mode for audio** - select this option to optimize voice transmitting quality and minimize transmission delay (Port 5000 set by default). When broadcast mode is set, Dispatch Console cannot be run on the same machine with TRBOnet RadioServer;

- **Use proxy server** - select to enable Proxy Sever service in TRBOnet Dispatch Software to access Internet. Click «**Configure**» button to set the alternative server settings:

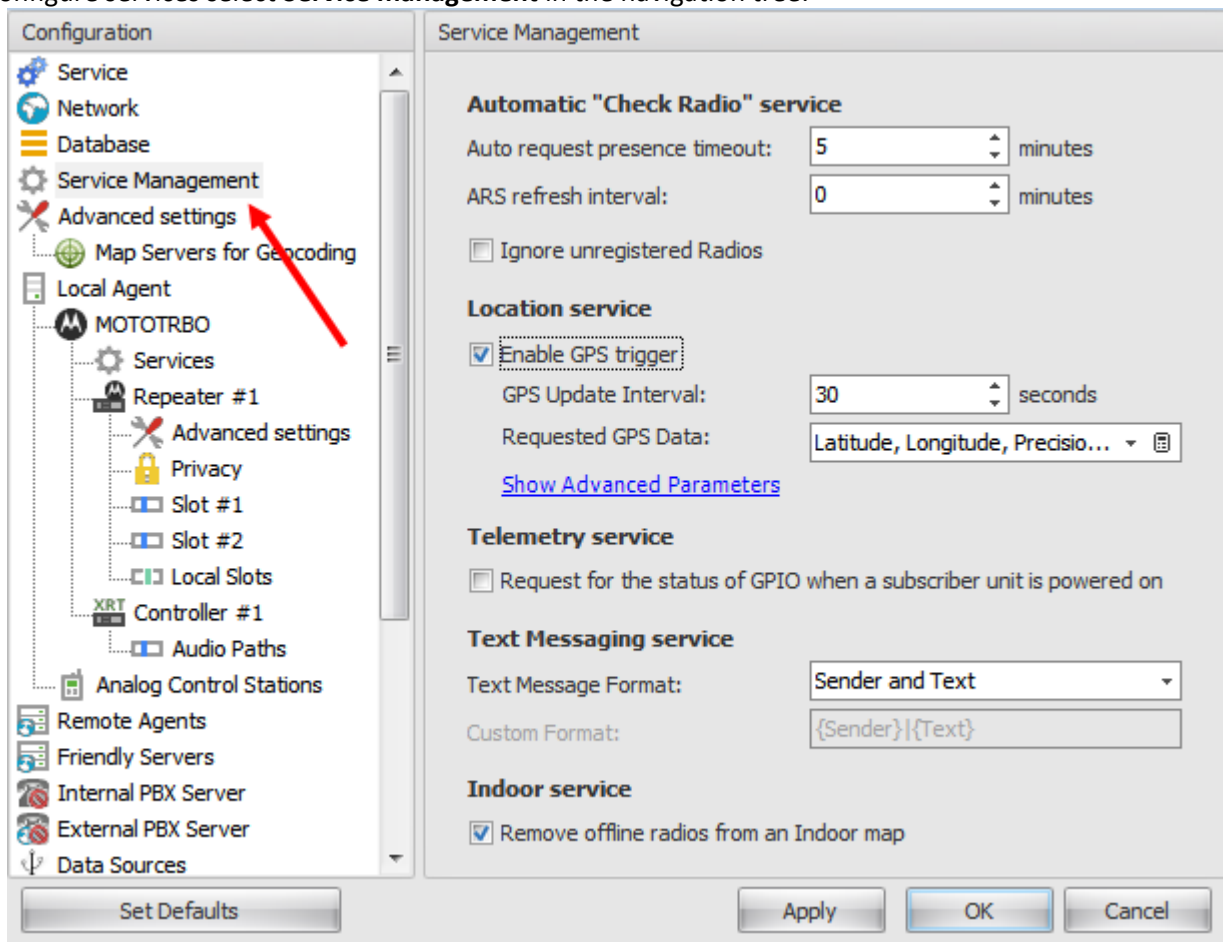


- **Use an alternate server** – select to enable a proxy server;
- **Settings** – specify the alternate server address and port;
- **Authentication**
- **Use authentication** – select to use individual login and password to connect to the alternate server.
- Click «**OK**» to add the proxy server.
- **Encrypt data over network** - select this option to provide higher security of data transferred between TRBOnet Agent and TRBOnet RadioServer. It is recommended to use this option when connection between the elements is carried out via the Internet or other public networks.
- **Reserve server mode** –for more details on Backup Server see [Appendix I: Backup Server](#).

Service Management

Service management allows managing ARS, location and telemetry services.

To configure services select **Service management** in the navigation tree:



Configure the following parameters:

Automatic "Check Radio" Service

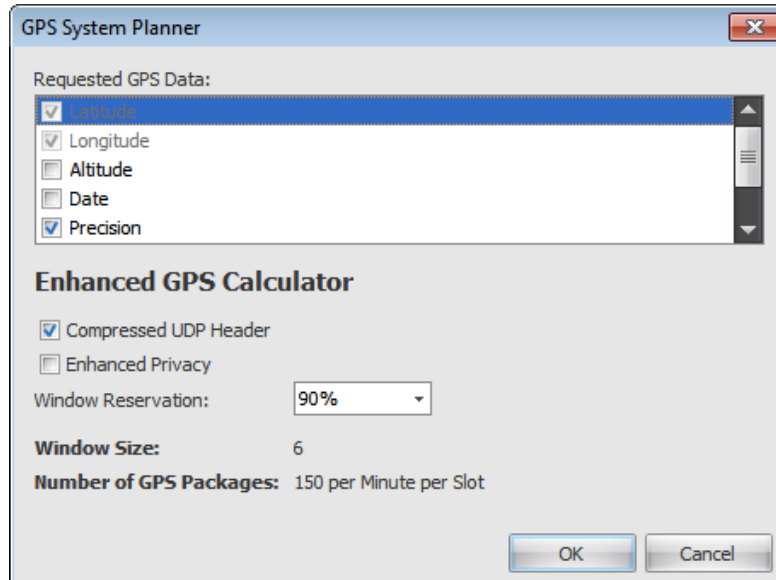
Parameter	Description	
Auto request presence timeout	This parameter is a software feature, not native MOTOTRBO™ ARS. Select the time interval to check Subscriber Unit for inactivity regularly. Radio is considered inactive (or offline) if it does not send GPS, Text, ARS, or Voice messages. If you do not have a dedicated channel for data revert, use the following table	
	Number of subscribers	ARS request presence timeout (minutes)
	up to 10	5
	10 to 20	9
	20 to 30	13
	30 to 40	17
	40 to 50	21
	For radio networks of over 50 subscriber radios set the Auto request presence timeout as 120 minutes.	
ARS refresh timeout	It is recommended to use 30 minutes value. This parameter defines how frequently subscriber unit will send ARS packet.	
Ignore unregistered radio units	Unregistered radio units will be ignored and will not appear in Dispatch Console.	

Location Service

Parameter	Description	
Enable GPS trigger	Check to use GPS Positioning. It is a common parameter for all radios.	
GPS Update Interval	Specify default time interval for Subscriber Unit to send GPS data packets. If you have only one channel and do not use revert GPS channel use the following table:	
	Number of subscribers	GPS polling interval (seconds)
	up to 10	21
	10 to 20	42
	20 to 30	63
	30 to 40	84
	40 to 50	105
	50 to 60	126
	60 to 70	147
	70 to 80	168
	80 to 90	189
	90 to 100	210
Request GPS data	Select the data to request in the dropdown list.	

System Planner Window

System Planner allows to calculate the values of Window Size and available Number of Updates for a radio per minute. Select GPS data to retrieve, “**Compressed UDP Header**” and “**Enhanced Privacy**” options values from a code plug of subscriber units and System Planner will automatically calculate Window Size to specify in code plugs of repeaters, control stations and subscriber radios:

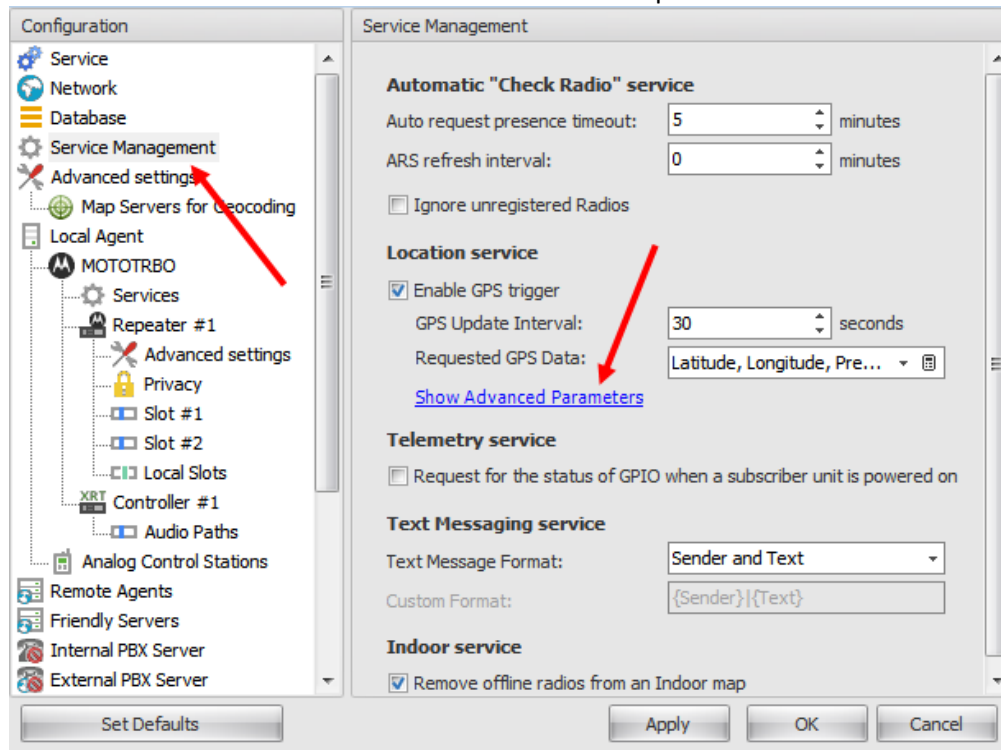


- Select data what are supposed to be requested in the **Requested GPS data** field;
 - **Compressed UDP header** - enabling this feature reduces delays in over the air data transmissions. Use this option for all radios (recommended);
 - **Enhanced privacy** - select if Enhanced Privacy is used on a channel;
 - **Window reservation** - window reservation parameter from repeater's code plug. Select window reservation in the dropdown list (45, 60, 75 and 90% available);
 - **Window size** - calculated "Window Size" parameter for code plugs of repeaters, control stations and subscriber Units;
 - **Number of updates** - the number of updates per minute per slot available for each radio.
- Click «**OK**» to close the window.

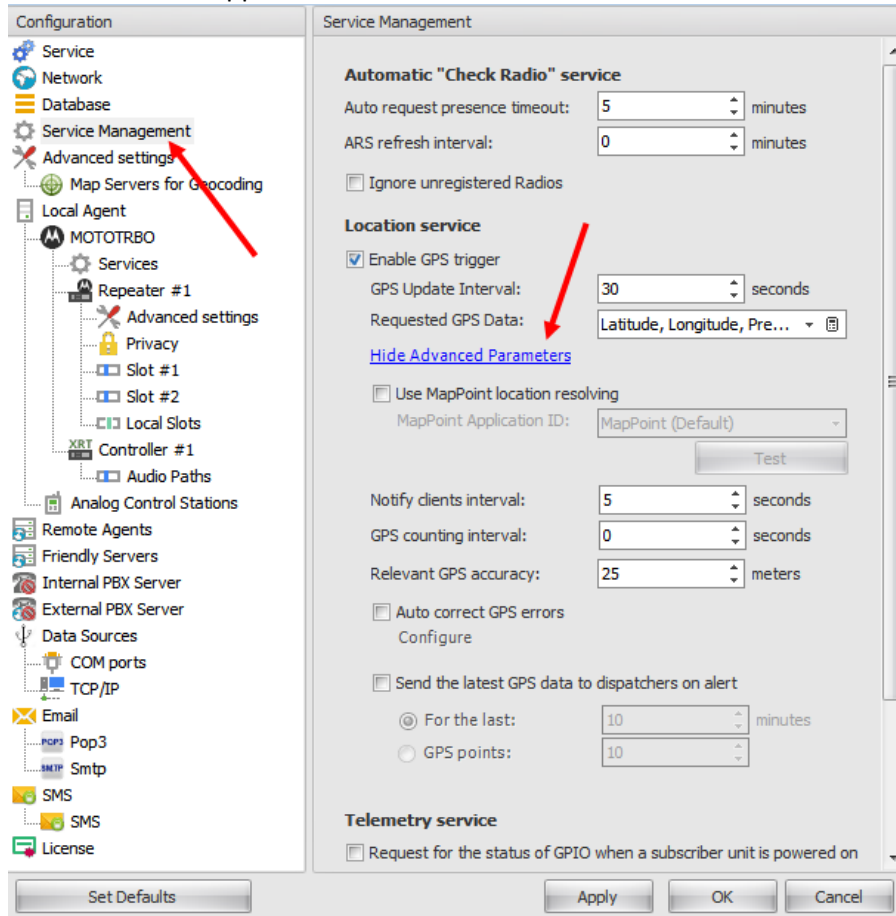
Note: GPS System Planner is intended for calculations only, to specify parameters in code plug of MOTOTRBO repeaters or radios. It does not affect the system.

Advanced GPS Parameters

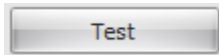
Click «**Show Advanced Parameters**» button to view advanced GPS options:



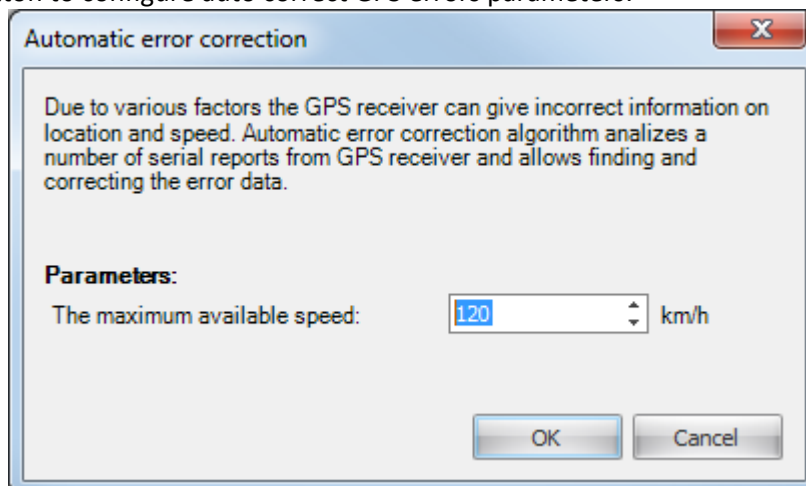
Advanced GPS parameters window appears:



Specify the following advanced GPS parameters:

- **Use MapPoint location resolving (optionally)** - select this option to acquire street names from MapPoint and specify the MapPoint application ID. MapPoint is the third-party application to install on the server to transfer coordinates into text;
- **MapPoint Application ID** - specify MapPoint Application ID. Click  button to check the connection;
- **Notify clients interval** - select interval of cumulative data package sending to Dispatch Console;
- **GPS counting interval** – available for Tallysman Sprite only;
- **Relevant GPS accuracy** - select Relevant GPS accuracy to ignore the coordinates with higher accuracy;
- **Auto correct GPS errors** - check to detect and correct invalid GPS data.

Click «**Configure**» button to configure auto correct GPS errors parameters:



Select the maximum possible speed for your vehicles.

Click «**OK**» to save changes.

- **Send the latest GPS data to dispatchers on alert** – the option makes radios to send last available GPS position by alert.
When alert initiated the last X GPS positions will be displayed on a map in Dispatch console.
- **For the last X minutes:** GPS positions of the radio within last X minutes will be displayed;
- **GPS points:** specified number of last GPS positions will be displayed.

Telemetry Service

Request for the status of GPIO when a subscriber unit is powered on - check to enable server to request for the status of a subscriber's radio telemetry when a radio is powered on.

Text Messaging Service

Text Messages format – select text messages format in the dropdown list.

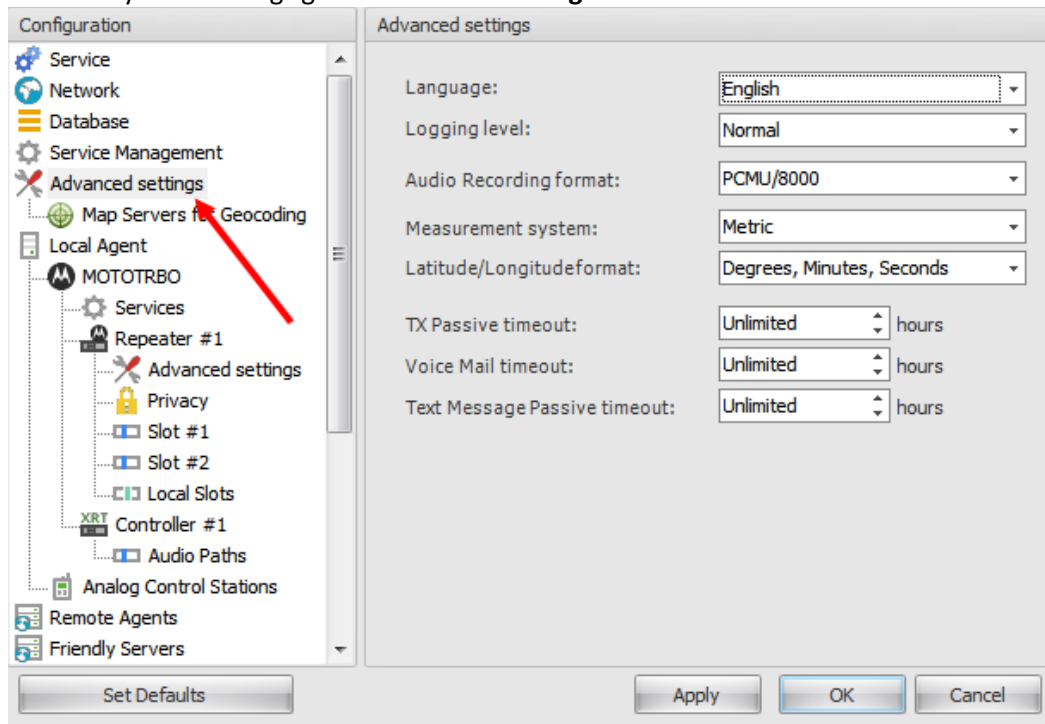
When «**Custom**» text messages format selected specify data for text messages.

Indoor Service

Remove offline radios from an Indoor map – select to hide offline radios on the 2D/3D floor plans.

Advanced Settings

To specify advanced system settings go to **Advanced Settings** tab:



Specify the following settings:

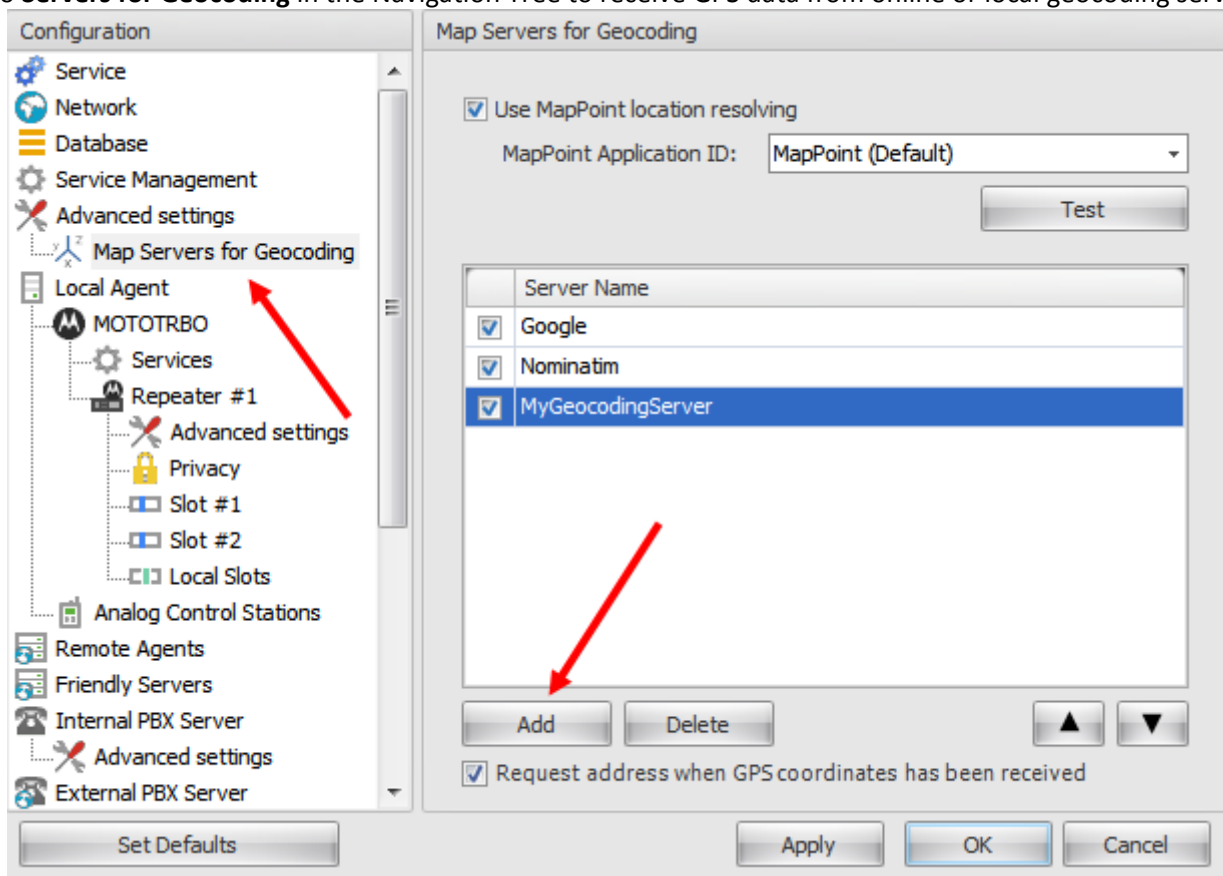
- **Language** - select TRBOnet RadioServer Configurator interface language in the dropdown list;
- **Logging level** - select logging level in the dropdown list. Determines the amount of data stored in the System Log. This information is used by technical support for troubleshooting, therefore it is recommended to keep the value unchanged;
- **Audio Recording format** - select Audio Recording format in the dropdown list;
- **Measurement system** - select Metric or American system in the dropdown list;
- **Latitude/longitude format** - select Latitude/longitude format in the dropdown list;
- **TX Passive timeout** - select timeout in the dropdown list (unlimited value recommended);
- **Voice Mail timeout** - select timeout in the dropdown list (unlimited value recommended);
- **Text Message Passive timeout** - select timeout in the dropdown list (unlimited value recommended).

Map Servers for Geocoding

Geocoding server resolves GPS coordinates to street names and address for reports and other needs, for example in “GPS activity for period” reports. Online geocoding services can be used like Google or Nominatim, but they are not for free or limited by amount or requests. Also, custom geocoding server can be configured. You can configure geocoding servers in three ways depending on server/console PC Internet access and your local geocoding server settings:

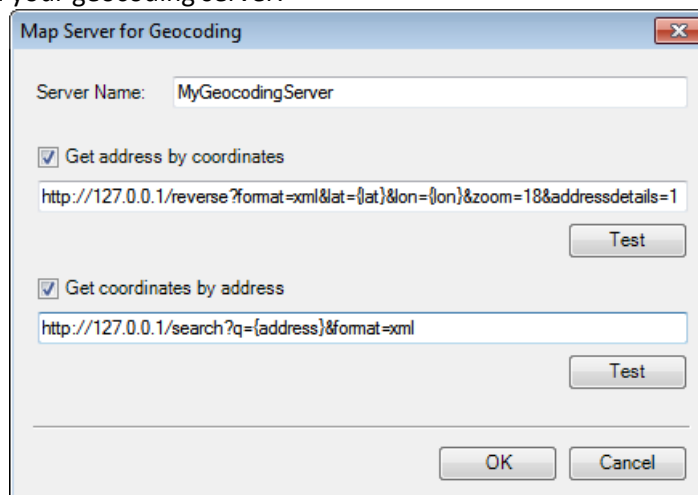
1. Dispatcher has Internet access and/or server PC has no Internet access. Dispatcher can connect to preconfigured (Google and Nominatim) and/or local corporate geocoding servers via Dispatch Console.
2. Server PC has Internet access and/or Dispatcher has no Internet access. Dispatcher can connect to preconfigured (Google and Nominatim) and/or local corporate geocoding servers via Server PC (follow the prompts below).
3. Your own local geocoding server in the local network. You can configure data resolving both in the Server Configurator and in the Dispatch Console.

Go to **Servers for Geocoding** in the Navigation Tree to receive GPS data from online or local geocoding servers:



Google and **Nominatim** geocoding servers are pre-configured and not available to delete.

Click «**Add**» button to add your geocoding server:



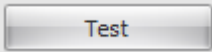
The dialog box 'Map Server for Geocoding' contains the following fields and controls:

- Server Name:** A text field containing 'MyGeocodingServer'.
- Get address by coordinates:** A checked checkbox. Below it is a text field with the URL: `http://127.0.0.1/reverse?format=xml&lat={lat}&lon={lon}&zoom=18&addressdetails=1`. To the right of this field is a 'Test' button.
- Get coordinates by address:** A checked checkbox. Below it is a text field with the URL: `http://127.0.0.1/search?q={address}&format=xml`. To the right of this field is a 'Test' button.
- At the bottom right are 'OK' and 'Cancel' buttons.

- **Server Name** – type in new geocoding server name;
- **Get address by coordinates** – check the option to resolve GPS coordinates to street addresses.

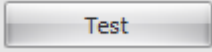
Specify the new geocoding server address (e.g. <http://IP Address/lat={lat}&lon={lon}>) or <http://mapserveraddress.com/lat={lat}&lon={lon}>);

Note: {lat}{lon} variables are necessary to input to allow TRBOnet Dispatch Software read radio GPS coordinates.

Click  button to check the connection to a map server. Input any GPS coordinates to get resolved street address.

- **Get coordinates by address** – select to resolve street addresses to GPS coordinates (e.g. for Search By Address feature).

Note: {address} variable is necessary to input to allow TRBOnet Dispatch Software search map objects by address.

Click  button to check the connection to a geocoding server. Input any address to receive list of map objects with selected address.

Use buttons **Up** and **Down** to select the priority level for geocoding servers. When radio GPS data requested via geocoding servers added in Server Configurator, TRBOnet RadioServer requests GPS data from geocoding servers according to Priority level. The first geocoding server in the list has the highest priority level. In case the first geocoding server is unavailable, data comes from the second geocoding server in the list.

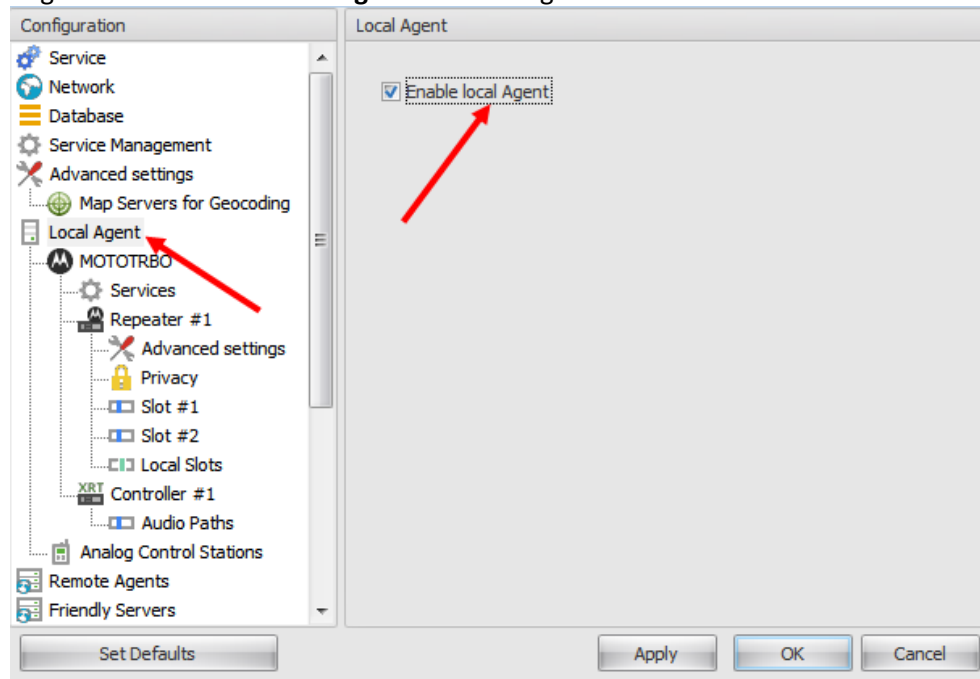
Administrator should check geocoding servers in the list to receive GPS data.

- **Request address when GPS coordinates has been received** – select to resolve GPS coordinates to street addresses immediately by GPS event. Street addresses and GPS coordinates are stored in the TRBOnet database to optimize response time for any street addresses requests e.g. GPS reports and to reduce geocoding server load.

Local Agent

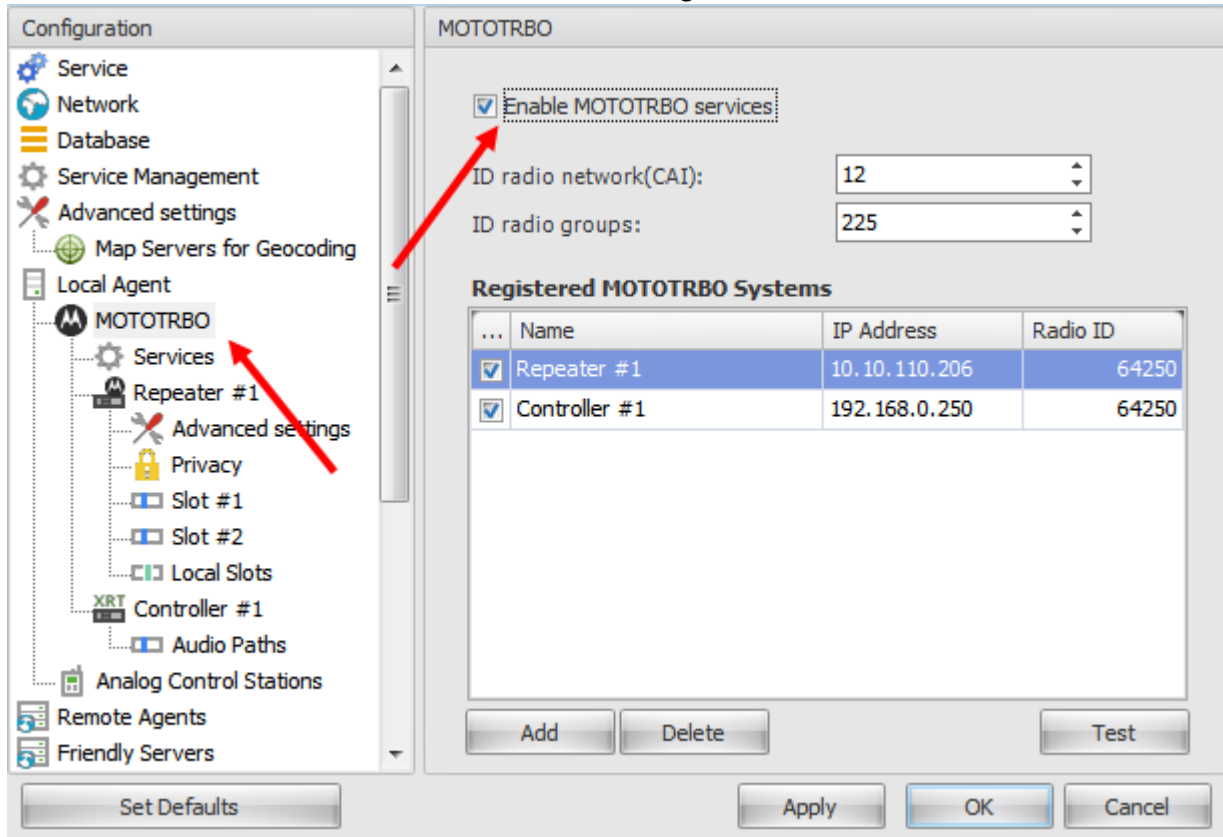
Agent is the intermedium between Server (radio network) and IP network. Enable Local Agent to connect TRBOnet RadioServer to a radio system. Otherwise use remote agents

To enable Local Agent service select **Local Agent** in the navigation tree:



Select **MOTOTRBO** in the navigation tree to set ID radio network, ID radio groups and manage the list of control stations.

To enable MOTOTRBO services select **MOTOTRBO** in the navigation tree:



Check **Enable MOTOTRBO services**.

Specify the following parameters:

- **ID Radio network (CAI)** - The Common Air Interface (CAI) standard specifies the type and content of signals transmitted by compliant radios. Specify ID Radio network (CAI) (12 set by default);
- **ID Radio groups** - specify ID radio groups (225 set by default).

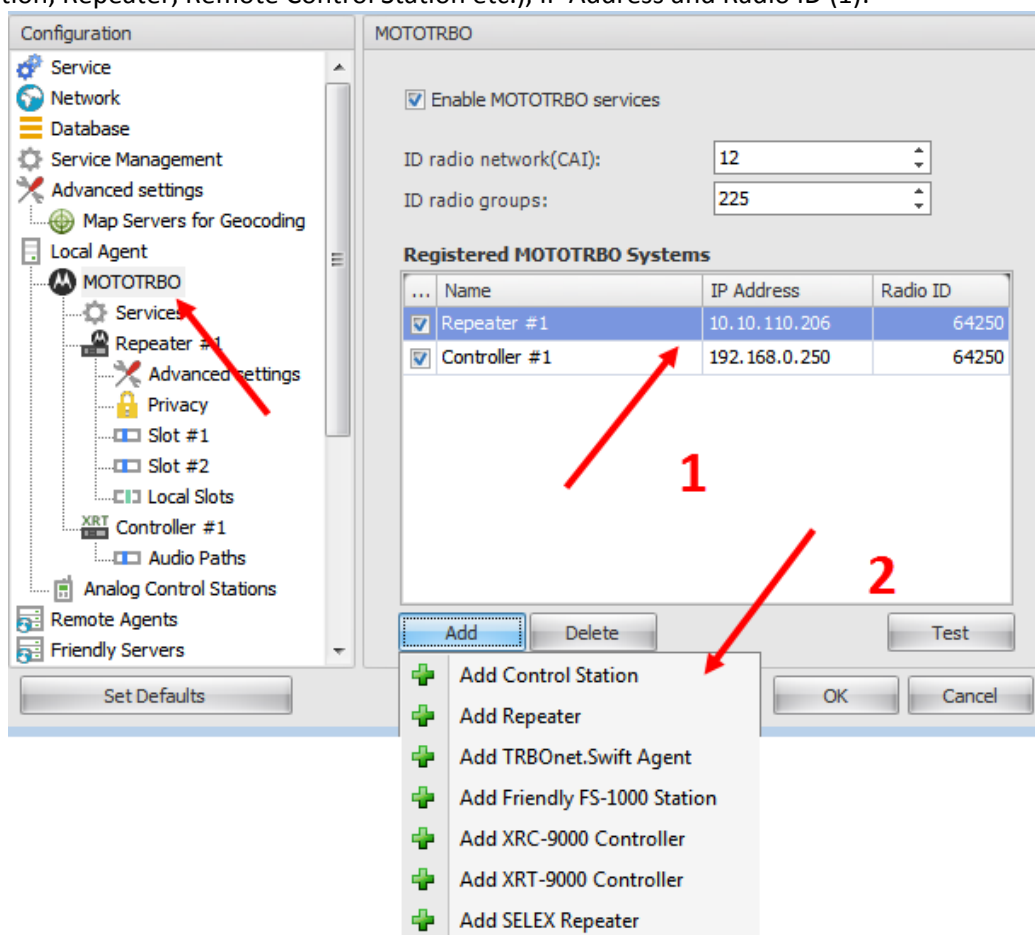
Note: ID Radio network (CAI) and ID Radio groups should be the same with the radio system settings (radio code plug parameters).

Configure TRBOnet RadioServer radio network settings to match those of the Control Station according to the following correspondence table:

TRBOnet RadioServer	Motorola MOTOTRBO Radio
Radio Network ID	CAI Network
ID RadioGroup	CAI Group Network

MOTOTRBO System Elements

All Radio system elements based on MOTOTRBO services are represented in the table including its items (Control Station, Repeater, Remote Control Station etc.), IP Address and Radio ID (1):

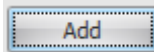


The screenshot shows the MOTOTRBO configuration window. On the left is a tree view with 'MOTOTRBO' selected. The main panel shows 'Enable MOTOTRBO services' checked, 'ID radio network(CAI):' set to 12, and 'ID radio groups:' set to 225. Below is a table titled 'Registered MOTOTRBO Systems'.

...	Name	IP Address	Radio ID
<input checked="" type="checkbox"/>	Repeater #1	10.10.110.206	64250
<input checked="" type="checkbox"/>	Controller #1	192.168.0.250	64250

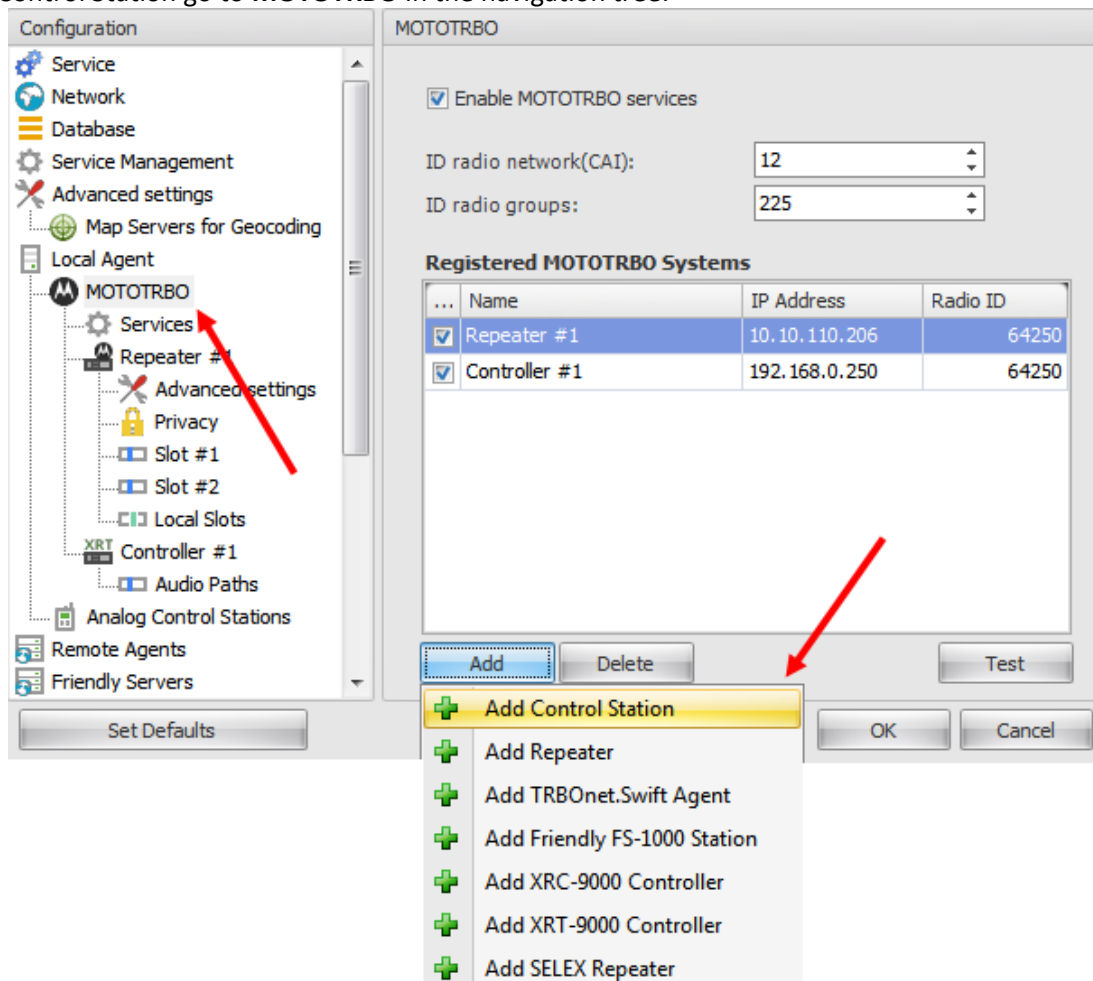
Below the table are buttons: 'Add', 'Delete', and 'Test'. The 'Add' button is highlighted with a red arrow labeled '1'. A dropdown menu is open from the 'Add' button, showing a list of options with green plus icons. A red arrow labeled '2' points to the 'Add' button in the dropdown menu.

- + Add Control Station
- + Add Repeater
- + Add TRBOnet.Swift Agent
- + Add Friendly FS-1000 Station
- + Add XRC-9000 Controller
- + Add XRT-9000 Controller
- + Add SELEX Repeater

To add an element in the system (Control Station, Repeater, Remote Control Station etc.) click  button and select type of element in the dropdown list (2).

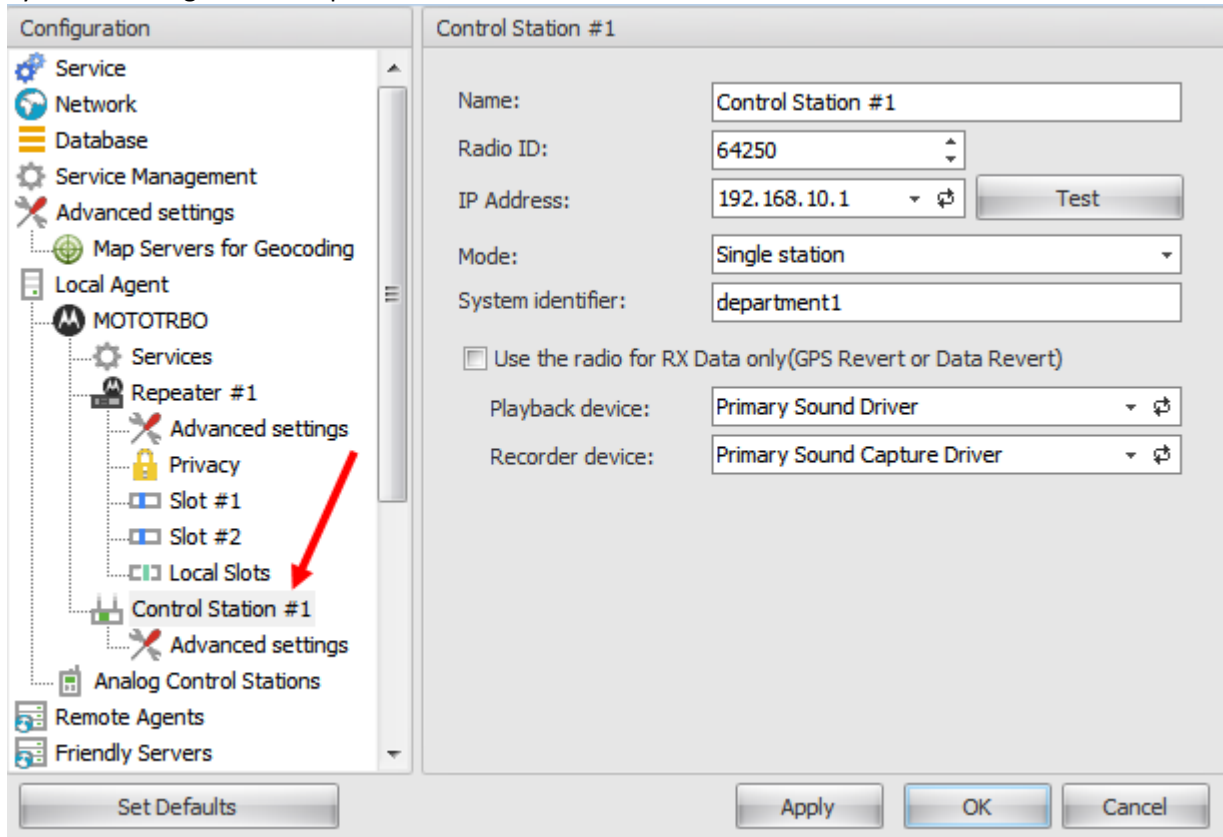
Add a Control Station

To add a Control Station go to **MOTOTRBO** in the navigation tree:



Click  button and select **Add Control Station** in the navigation tree.

Specify the following new radio parameters:

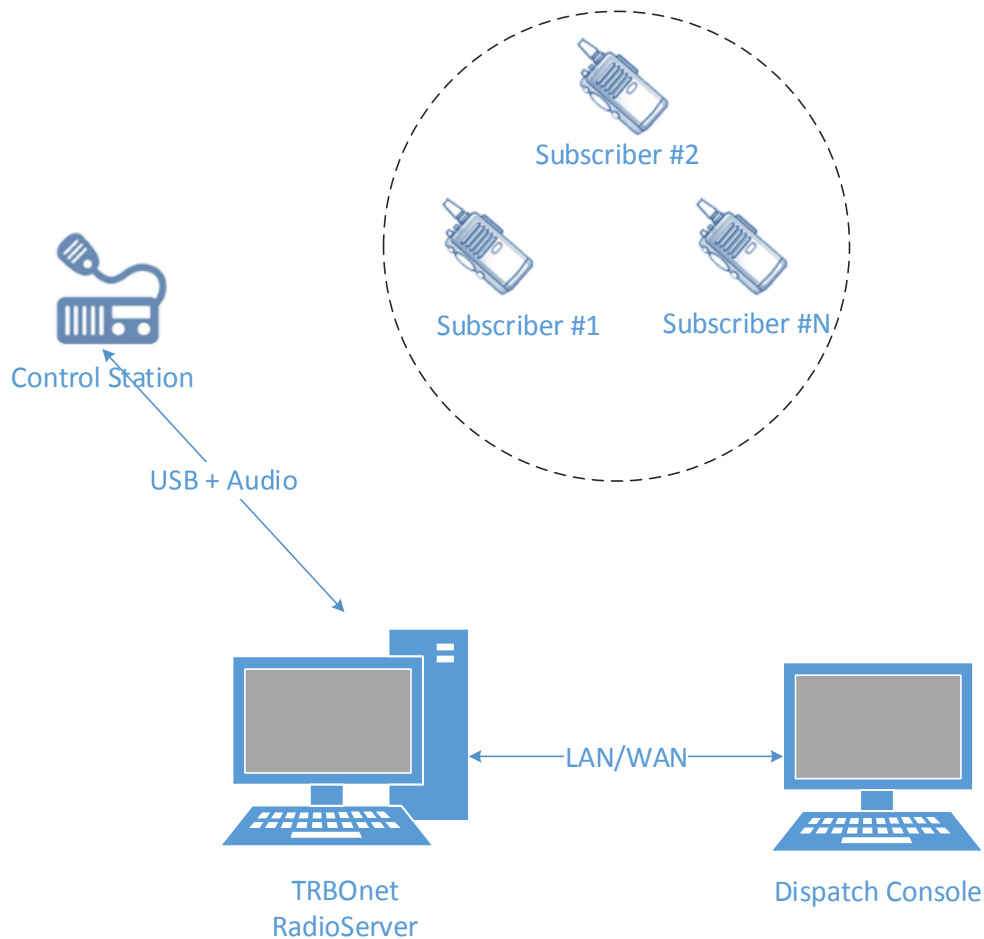


- **Name** - specify Control Station name to display in the Dispatcher Console;
- **Radio ID** - set an individual ID that uniquely identifies the radio. This ID is used by other calling radios when addressing the radio, for instance, when making a private call or sending a text message. Specify Radio ID for the new Control Station (max value for Capacity Plus systems – 65535);
- **IP Address** - select an IP Address of the new Control Station network interface;
- **Mode** - select mode for the new Control Station in the dropdown list. For more details see [Control Station Connection Modes](#) below;
- **System Identifier** - for Capacity Plus systems specify unique system identifier of the system for Control Stations and repeaters;
- **Use the radio for RX data only** - this option configures the channel to receive only without any transmission capability.
- **Playback device** - select the playback device connected to Control Station in the dropdown list;
- **Recorder device** - select the recording device connected to Control Station in the dropdown list.

Control Station Connection Modes

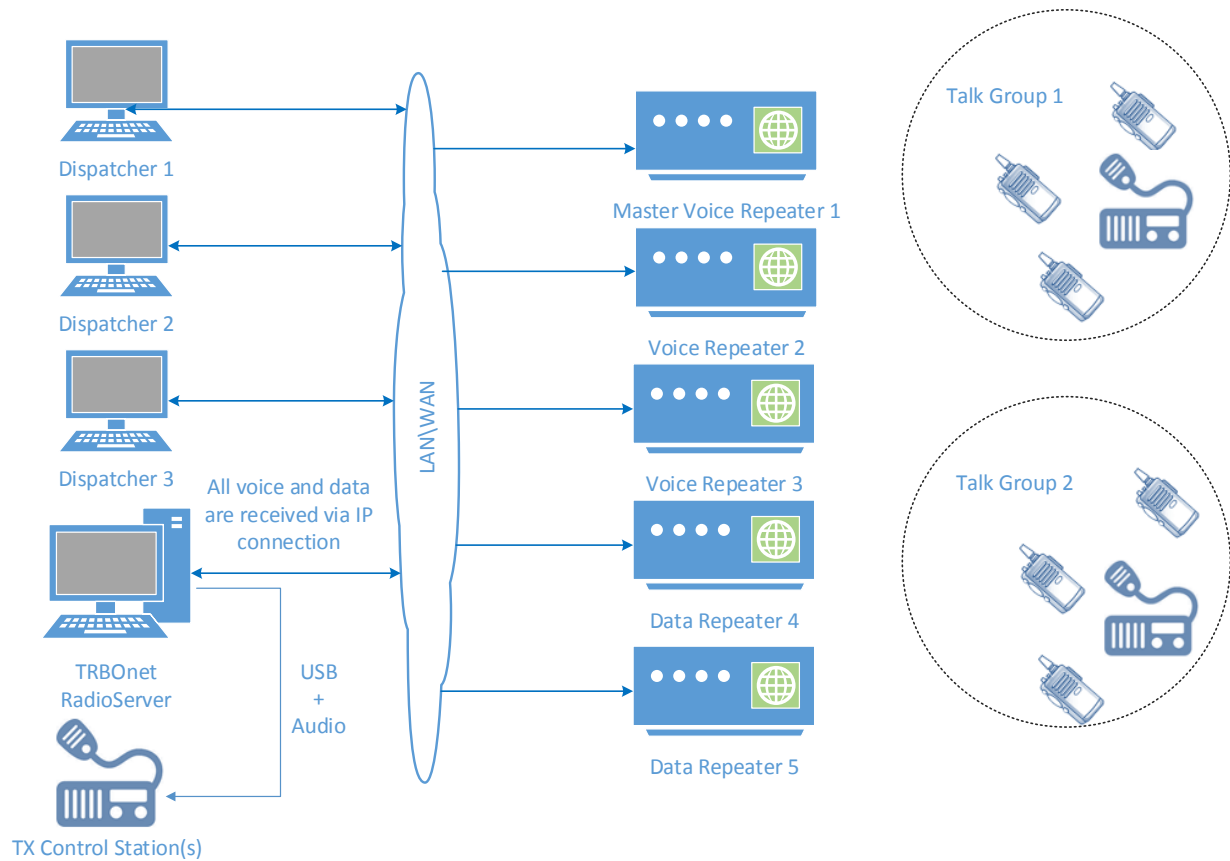
Single Station

Single Station mode is simplest connection mode to receive and transmit Voice and Data via conventional channel using one Control Station at one frequency.



Capacity Plus TRBOnet

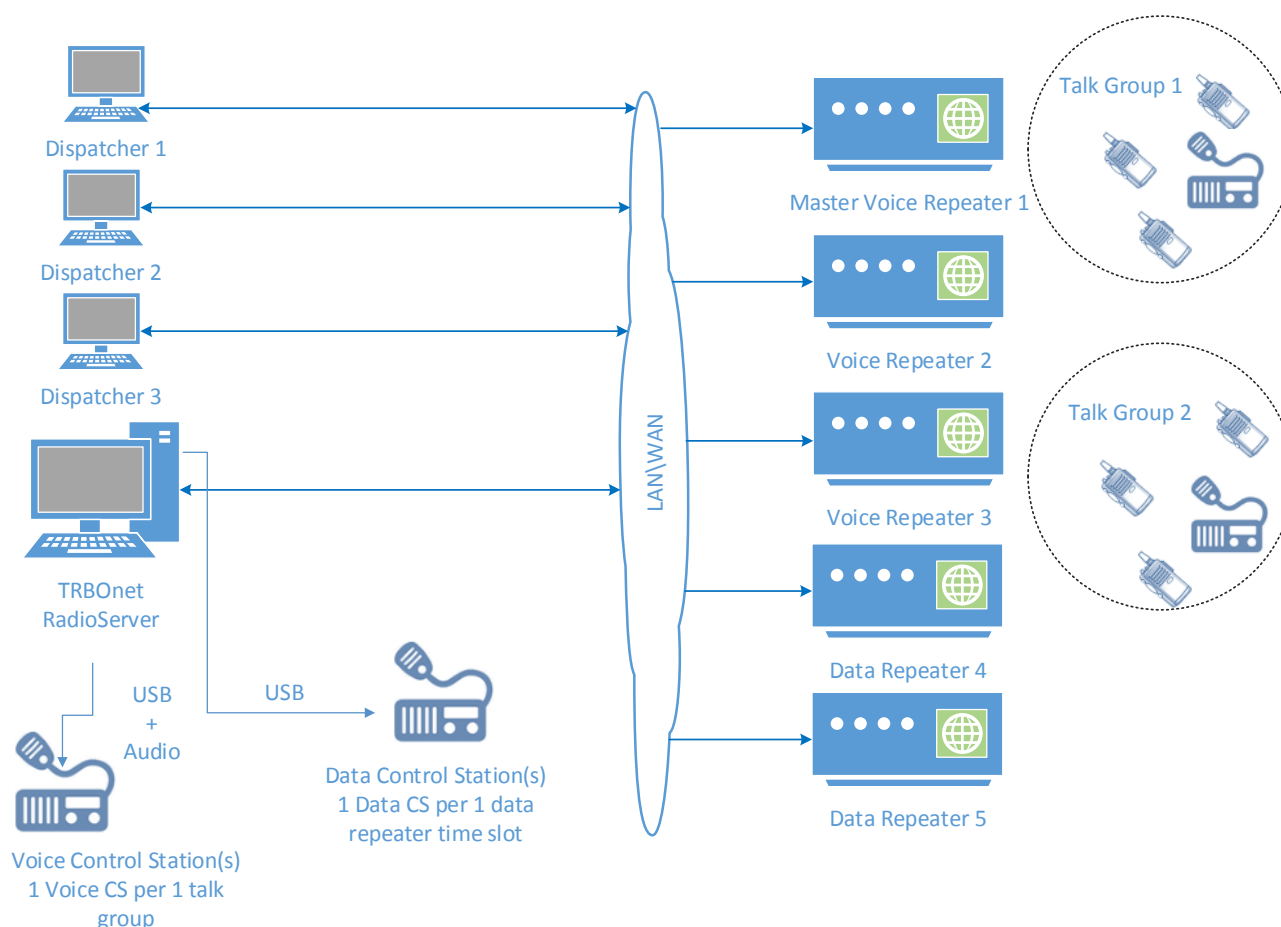
Capacity Plus TRBOnet is a limited option. All voice and data are received via IP. At least one Control Station is required for outgoing voice and data session at a time. The disadvantage of this system type is that Private Calls and SIP calls are not available.



Capacity Plus MOTOTRBO

Capacity Plus MOTOTRBO is a digital trunking two-way MOTOTRBO system that allows you to accommodate the high volume communication. It is designed to organize stable connection in a few groups within one building or a set of buildings. This system type allows you to increase the number of channels for voice and data transmission between the subscribers and control centers. The subscribers are always automatically forwarded to a free channel. The main objective of Capacity Plus MOTOTRBO is to support more simultaneous voice and data transmissions within one capacious system.

In Capacity Plus MOTOTRBO mode you can configure voice and data control stations to transmit and receive data over the air as it is displayed in System Planner. Keep in mind, 2 data control stations are required per each data repeater – one per time slot. TRBOnet Dispatch Software provides you an option to utilize an IP connection to receive voice and data and get rid of data control stations.

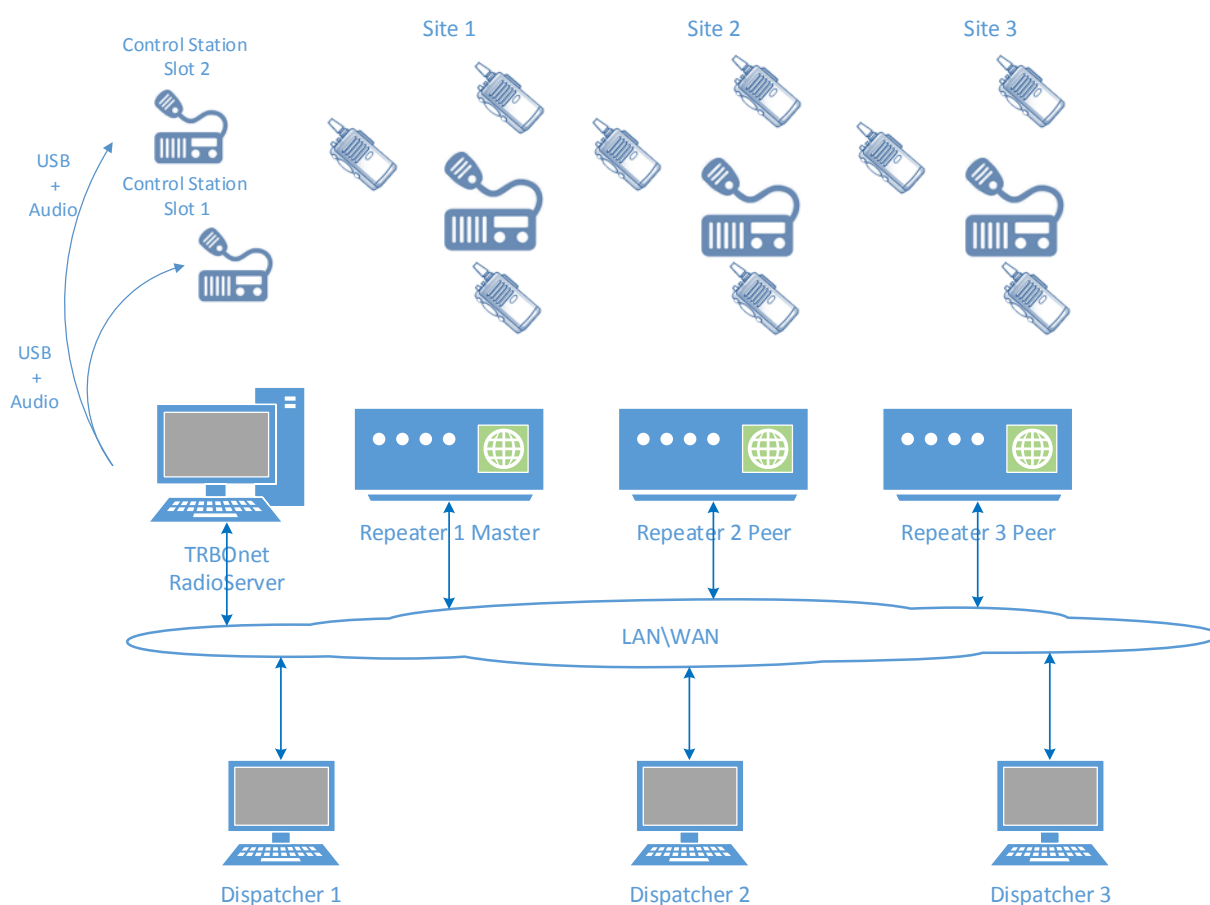


IP Site Connect

IPSC is a digital conventional two way MOTOTRBO system that allows you to extend the area of your communication providing 2 wide area channels. It is possible to connect up to 15 repeaters in one system using IP connection.

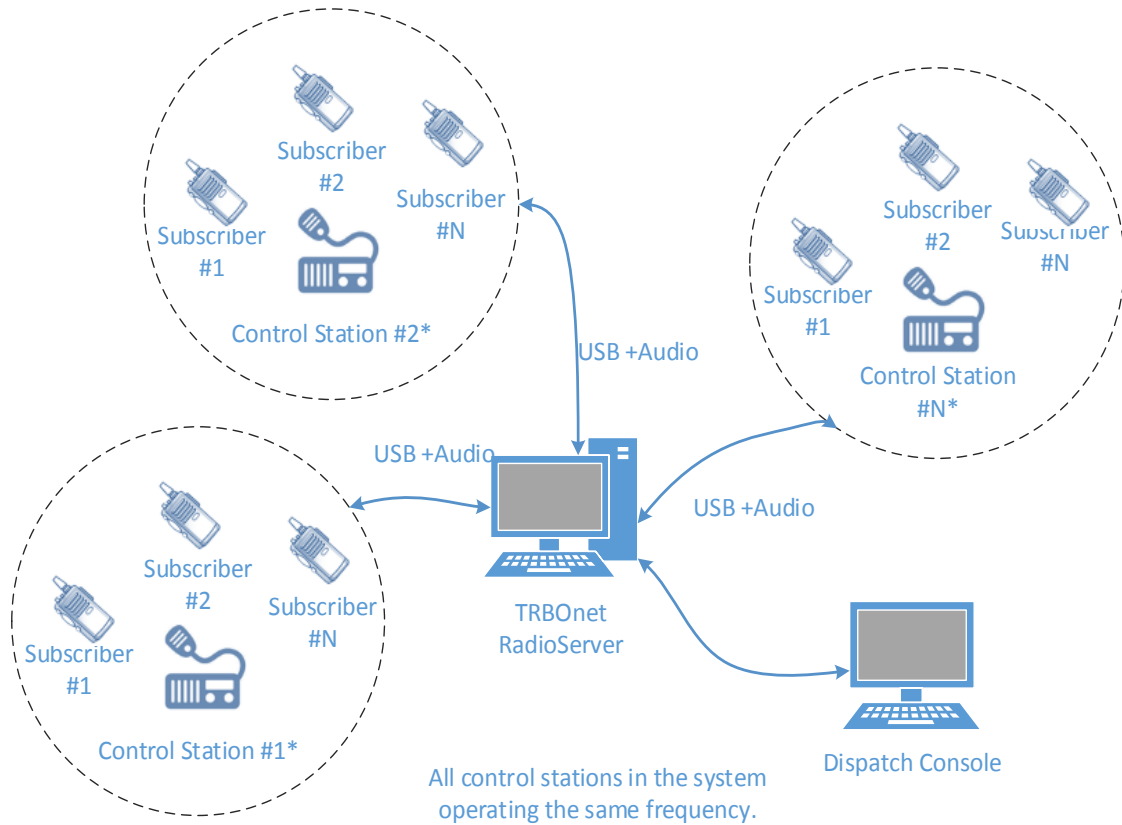
Radio Server Connection Modes

1. TRBOnet RadioServer connects to a repeater with time slots in "IP Site Connect" mode. RadioServer can transmit and receive over IP.
2. TRBOnet RadioServer connects to a repeater without "IP Site Connect" for time slots. RadioServer can transmit over IP, but requires a control station to transmit. One control station per time slot.
3. TRBOnet RadioServer has no IP connection to repeater. To transmit and receive control station are required, one control station per time slot.



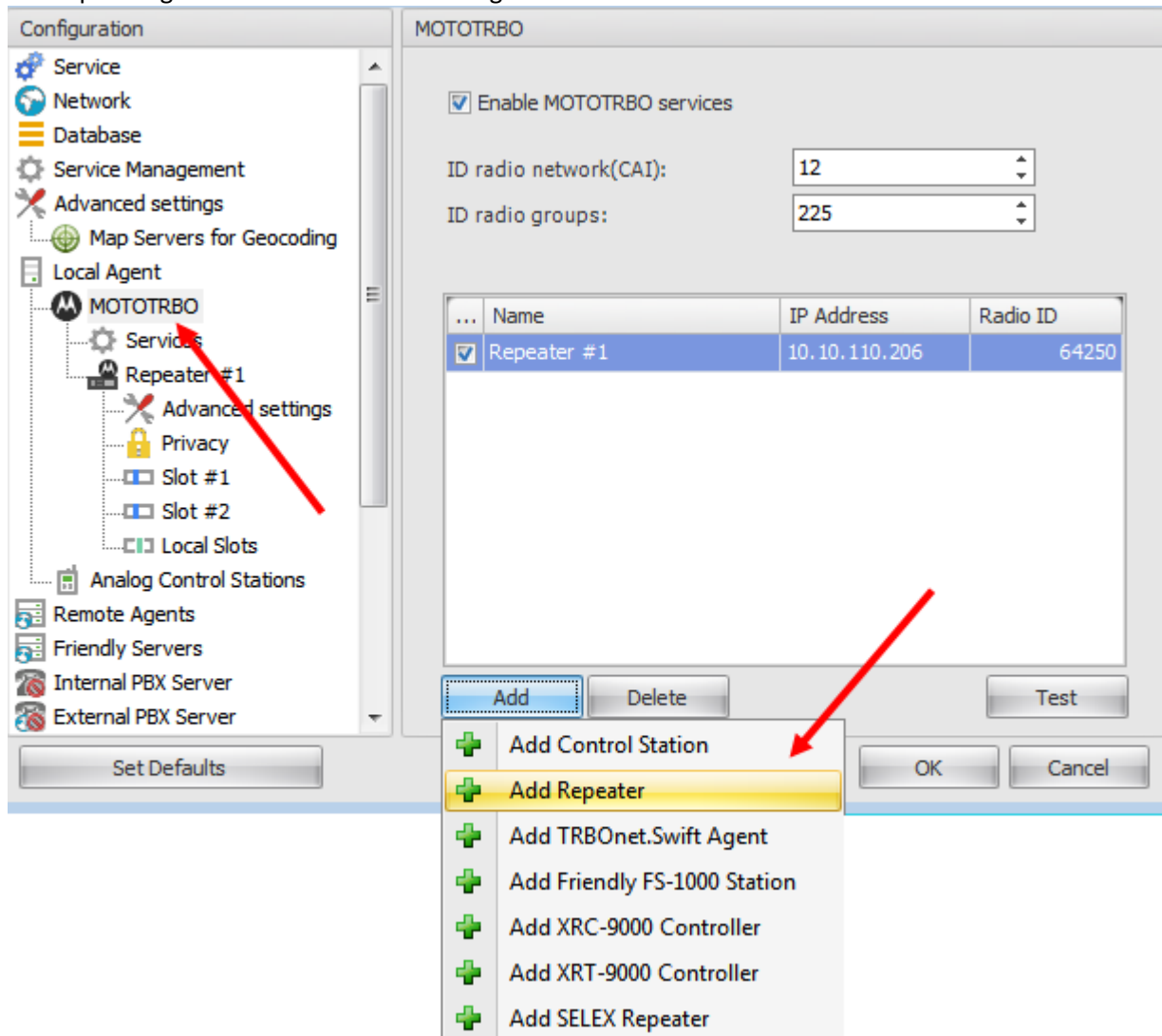
Common Channel

Common Channel is the connection mode to receive and transmit Voice and Data via conventional channel using a number of long-distance Control Stations at one frequency. When subscriber initiates a Voice call the sound comes from one Control Station to provide radio coverage of larger areas.



Add a MOTORBO Repeater

To add a repeater go to **MOTOTRBO** in the navigation tree:



The screenshot shows the MOTOTRBO configuration window. On the left is a navigation tree with the following structure:

- Configuration
 - Service
 - Network
 - Database
 - Service Management
 - Advanced settings
 - Map Servers for Geocoding
 - Local Agent
 - MOTOTRBO** (highlighted with a red arrow)
 - Services
 - Repeater #1
 - Advanced settings
 - Privacy
 - Slot #1
 - Slot #2
 - Local Slots
 - Analog Control Stations
 - Remote Agents
 - Friendly Servers
 - Internal PBX Server
 - External PBX Server

At the bottom of the navigation tree is a 'Set Defaults' button.

The main panel of the MOTOTRBO window shows the following settings:

- ☒ Enable MOTOTRBO services
- ID radio network(CAI): 12
- ID radio groups: 225

Below these settings is a table with the following data:

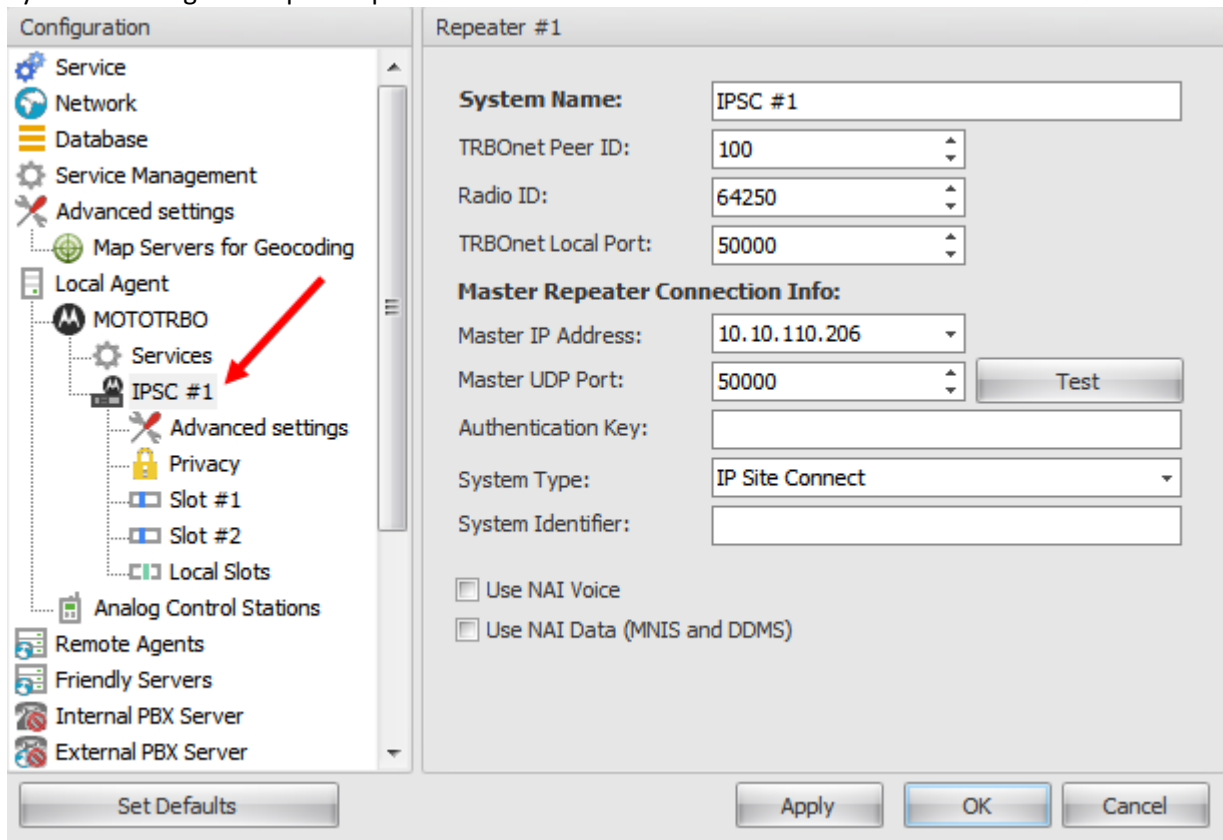
...	Name	IP Address	Radio ID
<input checked="" type="checkbox"/>	Repeater #1	10.10.110.206	64250

At the bottom of the main panel are buttons for 'Add', 'Delete', 'Test', 'OK', and 'Cancel'. A red arrow points to the 'Add' button, which has a dropdown menu open showing the following options:

- + Add Control Station
- + Add Repeater** (highlighted)
- + Add TRBOnet.Swift Agent
- + Add Friendly FS-1000 Station
- + Add XRC-9000 Controller
- + Add XRT-9000 Controller
- + Add SELEX Repeater

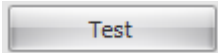
Click  button and select **Add Repeater** in the navigation tree.

Specify the following new repeater parameters:



- **System Name** - specify a repeater's name in the system to display in Dispatch Console;
- **TRBOnet Peer ID** - specify a unique Peer ID for TRBOnet RadioServer in radio system;
- **Radio ID** – specify radio ID to display in the Dispatch Console;
- **TRBOnet Local Port** - specify a local port of TRBOnet RadioServer to accept connections from a repeater. Use unique ports for each repeater connection if there are several repeaters connected;

Master Repeater Connection info

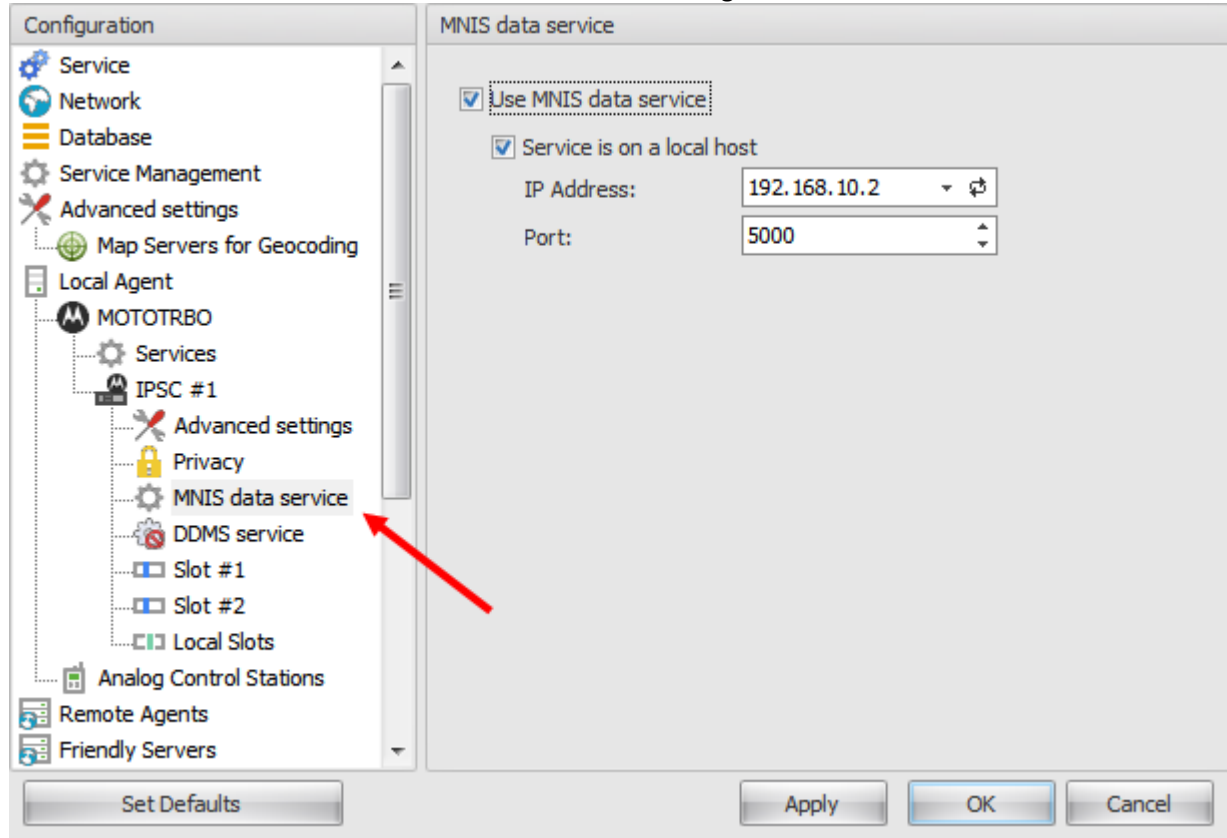
- **Master IP Address** - specify Ethernet IP address of the repeater from its codeplug;
- **Master UDP Port** - specify UDP port of Master repeater to connect. Click  button to check the connection to Master repeater. A window will appear. In case of success it should show firmware version and serial number of the repeater;
- **Authentication Key** - specify the repeater's authentication key from code plug if it is used.
- **System Type** - select system type in the dropdown list. Specify a unique System Identifier for a Capacity Plus system. Use the same System Identifier as for Control Station from the same system.
- **Use NAI Voice** – select to connect to repeater via NAI (Network Application Interface) for Voice transfer. For more details on NAI see [Appendix G: NAI VOICE & DATA Support](#).
- **Use NAI Data (MNIS and DDMS)** – select to connect to repeater via NAI (Network Application Interface) for Data transfer. For more details on NAI see [Appendix G: NAI VOICE & DATA Support](#).
 - ✓ **MNIS** - MOTOTRBO Network Interface Service - Windows application which acts as Voice and Data Gateway between the data applications and radio system. Voice and Data messages are routed through the MNIS.
 - ✓ **DDMS** – Device Discovery and Mobility Service is the service to receive the data to a repeater. Available for Link Capacity Plus only.

MNIS Data Service

Note: available when MNIS for data enabled on **Repeater** tab

MNIS – Motorola Network Interface is a service, which captures data from DDMS service and transfers the data to a radio server.

To enable MNIS data service select MNIS data service in the navigation tree:



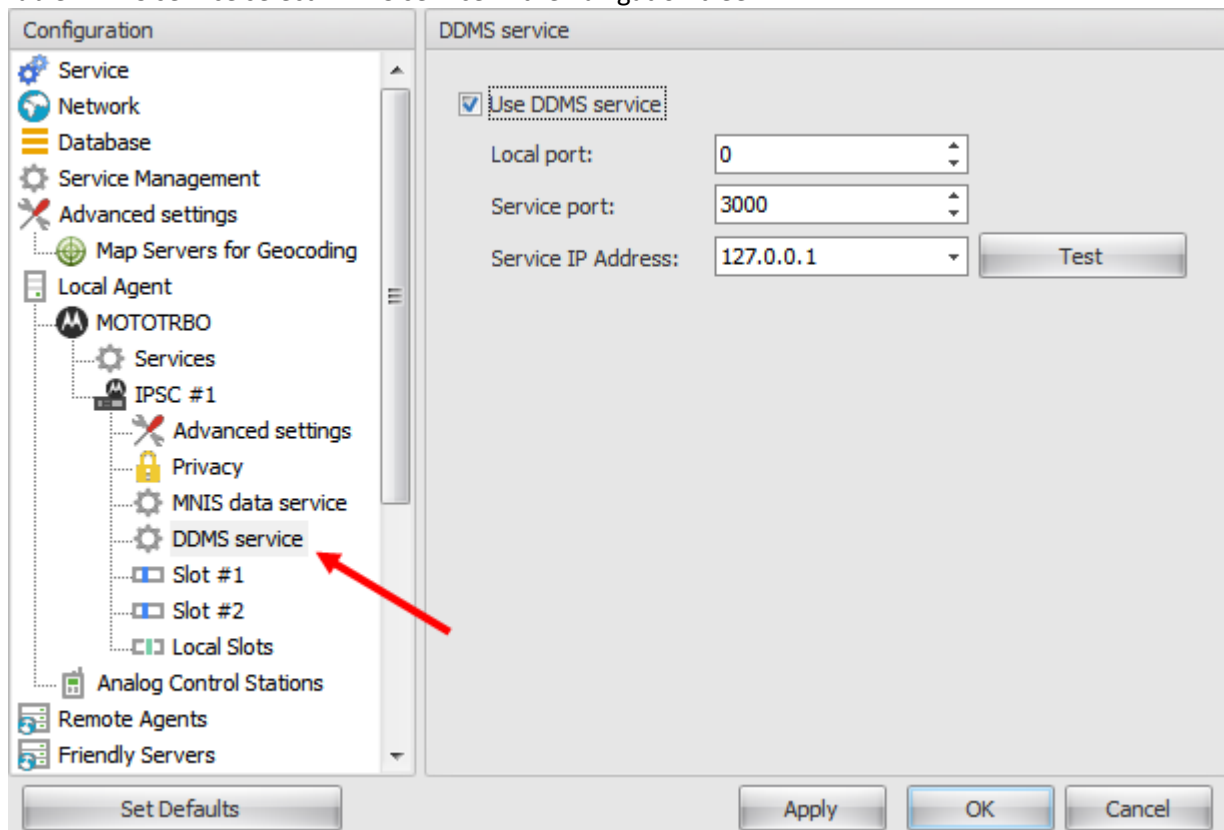
- **Use MNIS data service** – check to enable MNIS data service;
- **Service is on a local host** – check to use MNIS data service on the local PC;
- **IP Address** – specify IP Address of the PC with MNIS service installed;
- **Port** – the default value is 5000. You can select any free port on the Server PC.

DDMS Service

Note: available when **MNIS for data** enabled on **Repeater** tab.

DDMS – Device Discovery and Mobility Service is the service to receive the data to a repeater. Available for Link Capacity Plus only.

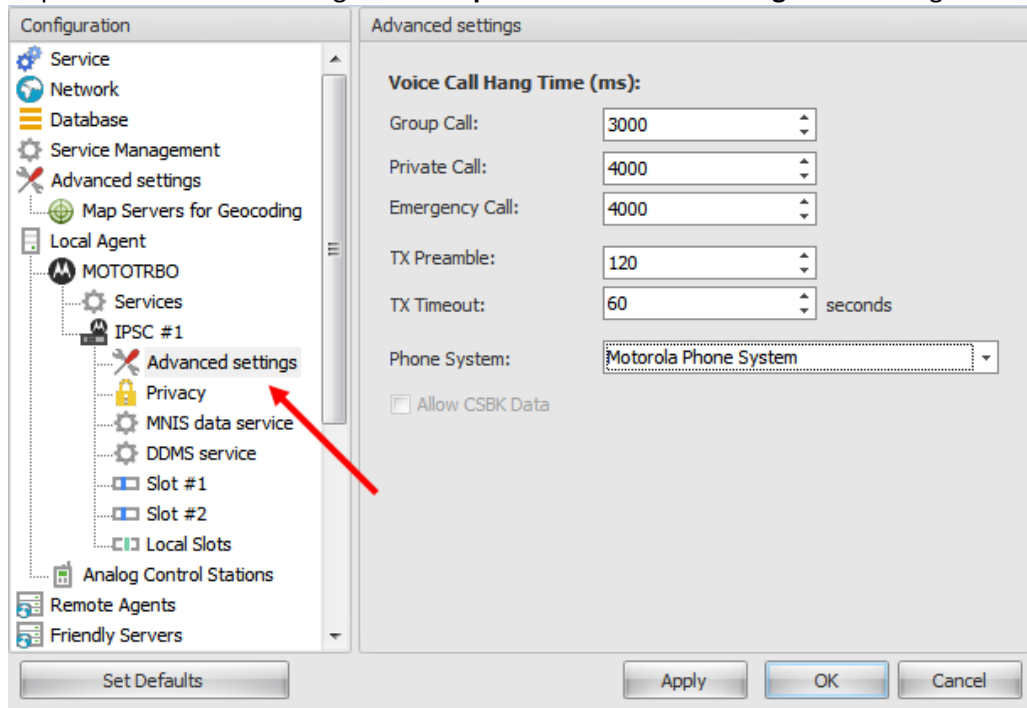
To enable DDMS service select DDMS service in the navigation tree:



- **Use DDMS service** – check to enable DDMS service;
- **Local Port** - local port of PC with TRBOnet Dispatch Software. Specify free port for DDMS service;
- **Service port** – specify Service Port from DDMS service configuration (MOTOTRBO DDMS Administrative Client);
- **Service IP Address** – specify IP Address of the PC with DDMS service installed.

Repeater's Advanced Settings

To configure Repeater's advanced settings select **Repeater - Advanced settings** in the navigation tree:



Specify the following Repeater's Advanced Settings:

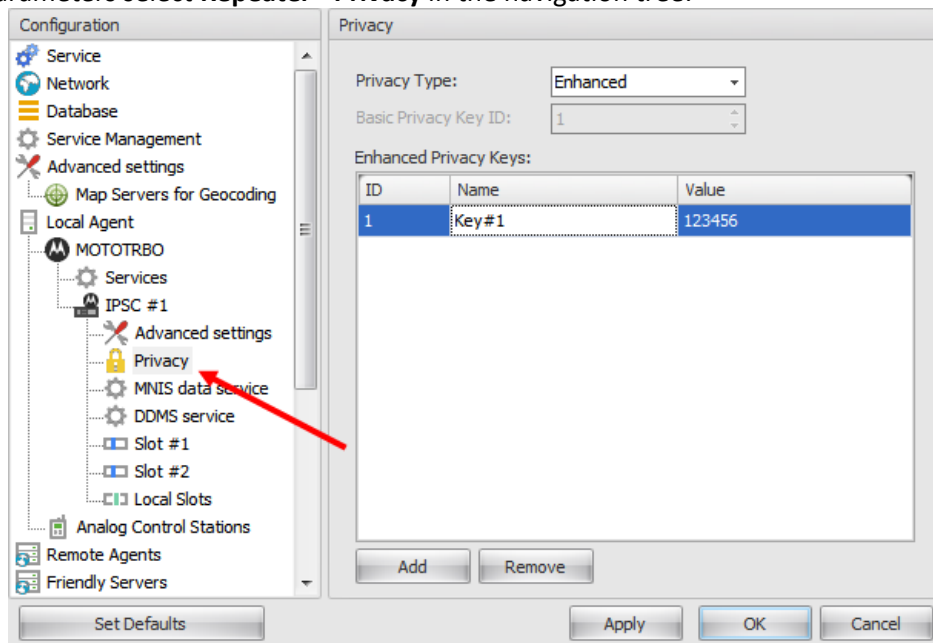
Voice Call Hang Time (ms):

- **Group Call** - sets the duration during which a radio will talk back to a received Group Call or continue a transmitted Group Call. Specify Group Call Hang Time from the repeater code plug;
- **Private Call** - sets the duration a radio keeps the Private Call setup after a user releases PTT button. This is to avoid setting up the call again each time a user presses PTT button to transmit. During this time, other radios can still transmit since the channel is essentially idle. After the hang timer expires, the radio transmits using the TX Contact Name specified for this channel in CPS. Specify **Private Call Hang Time** from code plug;
- **Emergency Call** - sets the duration the repeater reserves the channel after the end of an emergency call transmission. During this time, only members of the Group that the channel is reserved for can transmit. Specify Emergency Call Hang Time from code plug;
- **TX Preamble** - set TX Preamble (0 - 8640 ms. values are available, 120 is recommended value);
- **TX Timeout** - voice session limit. When Dispatcher starts any Voice Session in the Dispatch Console, transmission will be interrupted after TX Timeout time count set in TRBOnet RadioServer Configurator.
- **Phone system** – select a system to make a phone calls:
 - ✓ **Mototrbo phone system** is a special call type with parameters set in radio code plug (recommended). Mototrbo Phone system recommended for IP Site Connect mode to minimize Radio response time. For more details on Motorola Radios programming see [Appendix F: SIP Setup for Motorola Phone System](#);
 - ✓ **TRBOnet Phone System (TX Interrupt)** is phone calls system based on Private Call type using TX Interrupt feature. Available for radios systems with control stations.

Note: Phone Interconnect feature for repeater is not required.

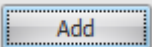
Privacy

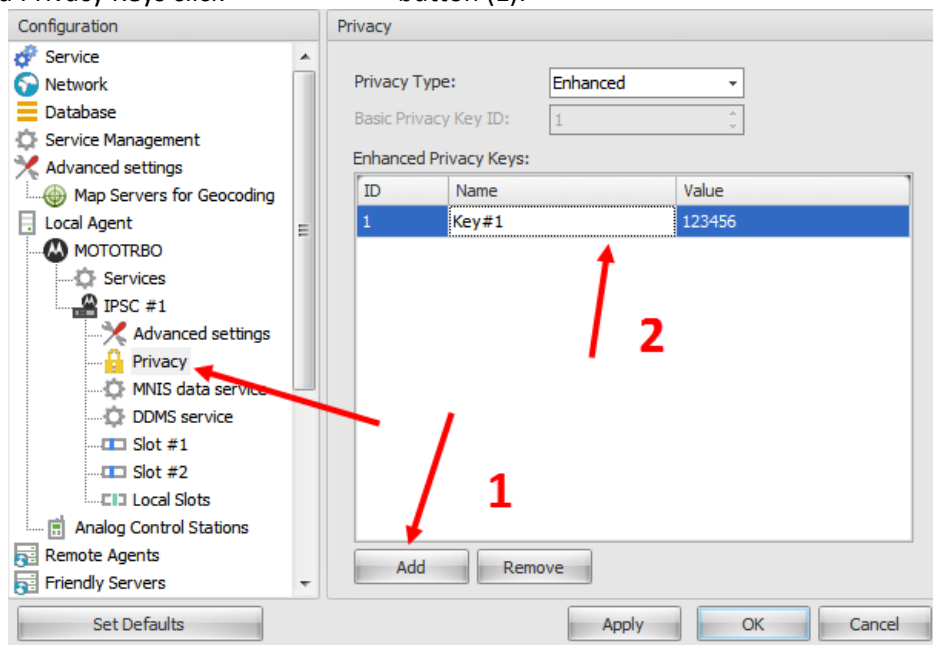
To set Privacy parameters select **Repeater - Privacy** in the navigation tree:



Specify the following Privacy parameters:

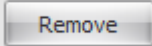
- **Privacy Type** - select **None** / **Basic** / **Enhanced** Privacy.
- **Basic Privacy Key ID** - available when **Basic** Privacy Type selected;
- **Enhanced Privacy Keys** - available when **Enhanced** Privacy Type selected.

To add Enhanced Privacy Keys click  button (1):



Enhanced Privacy Key automatically added in the table (2).

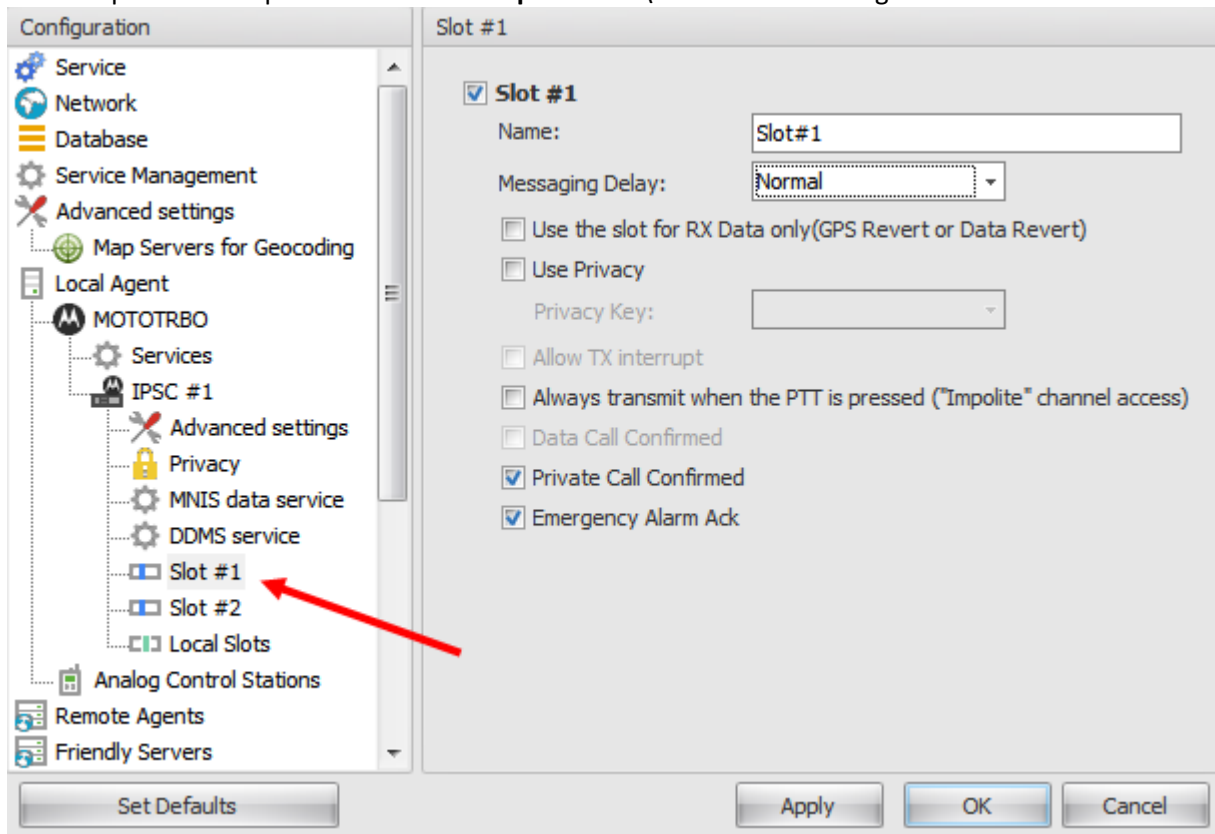
Specify Enhanced Privacy Key **ID**, **Name** and **Value** in the table.

To remove Enhanced Privacy Key click  button.

Slots

Note: available for IPSC mode only!

To set repeater's slot parameters select **Repeater #X \ Slot #X** in the navigation tree:



Specify the following slot parameters:

- **Name** - specify slot's name in the system;
- **Messaging Delay** - sets the inter-repeater and software messaging delay based on the IP network configuration. Select Messaging Delay type (Normal / High) in the dropdown list;
- **Use the slot for RX data only** - this option configures the channel to receive only without any transmission capability.
- **Use Privacy** - check to use Privacy for selected slot (available when **Basic** and **Enhanced** Privacy Types are selected in Repeater **Privacy** settings);
- **Privacy Key** - select Privacy key in the dropdown list (available when **Enhanced** Privacy Type is selected in Repeater **Privacy** settings);
- **Allow TX interrupt** - check to enable TX interrupt option for selected slot.

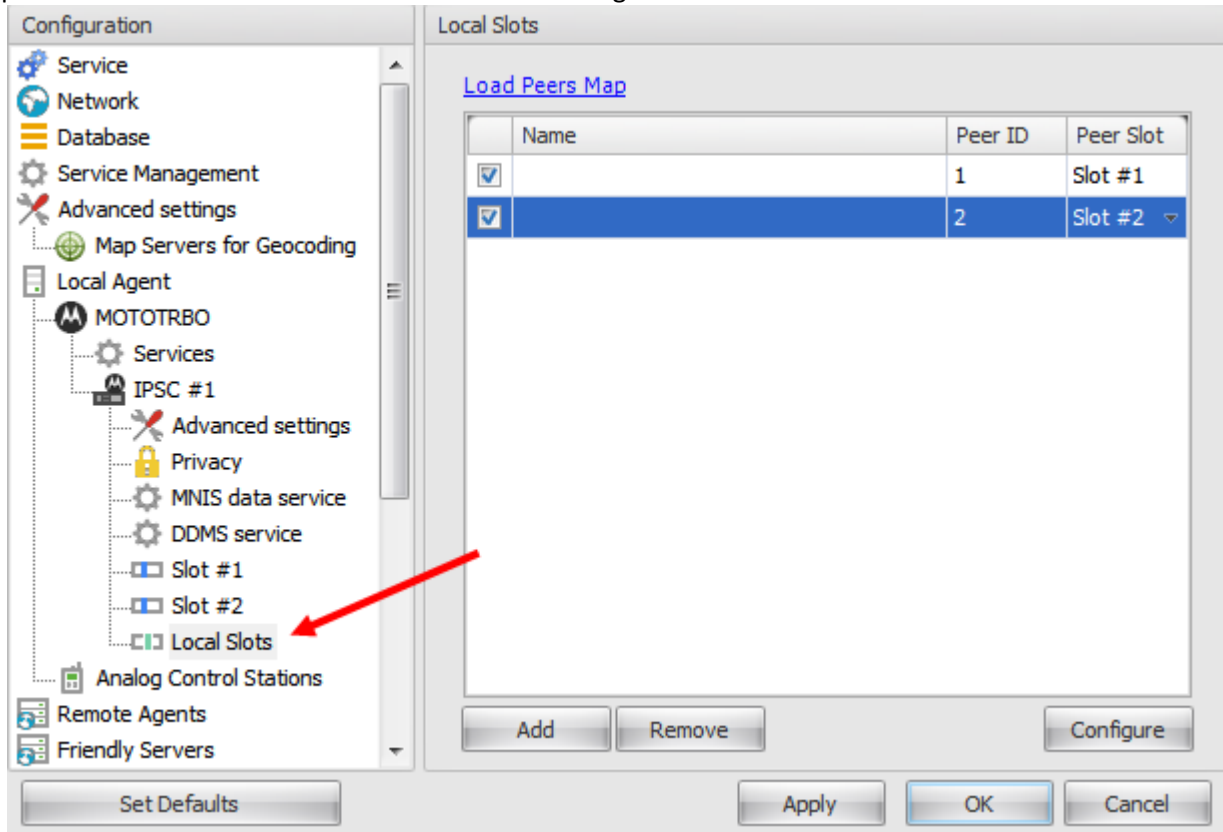
Note: Available when MNIS service disabled. See [MNIS Data Service](#) section.

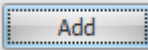
- **Always transmit when PTT is pressed ("Impolite" channel access)** - the radio will always transmit when the Push-to-Talk (PTT) button is pressed (not available in a Capacity Plus Personality channel).
- **Data Call confirmed** - enables individual packets in data calls (ARS, GPS, and Text Message) on the current digital channel or personality to be confirmed. By default, data calls are unconfirmed.
- **Private Call Confirmed** - sets Private calls on the current digital channel as confirmed. By default, Private calls are unconfirmed (disabled if **RX Only** is enabled.).
- **Emergency Alarm Ack** - Determines if TRBOnet is allowed to acknowledge an emergency alarm.

Local Slots

Note: available for **IPSC** mode only!

Voice or data are not being transmitted between sites in IPSC systems. Due to MOTOTRBO limitations TRBOnet RadioServer can receive only information from local slots, but cannot transmit by IP connection to such slots. To operate with Local Slots select **Local Slots** in the navigation tree:



To add Local Slot in the system click  button. Local Slot is added in the system.

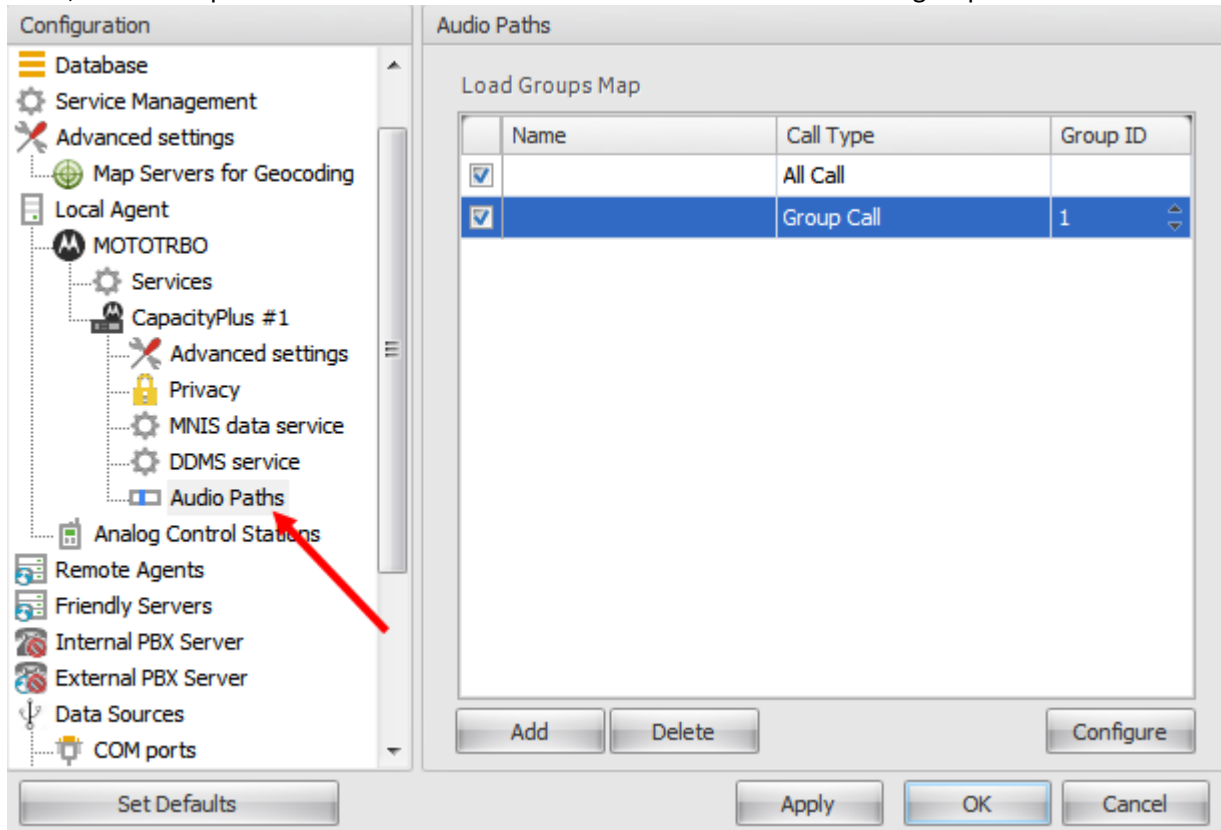
- Specify new Local Slot name in the **Name** column to display in Dispatch Console;
- Specify Peer ID of the repeater in the **Peer ID** column;
- Select Peer Slot in the dropdown list in the **Peer Slot** column;
- Specify Radio ID in the **Radio ID** column for the slot. This ID is used by other calling radios when addressing the radio, for instance, when making a private call or sending a text message. Specify Radio ID for the new Control Station. Available values from 1 to 16448250.

To remove a Local Slot click  button.

Audio Path

Note: available for **Capacity Plus** and **Linked Capacity Plus** modes!

Audio Paths are the talk paths of the system to make and receive Voice Calls, in general they are talk groups. TRBOnet requires registering all talk paths from Connect Plus system in its configuration. If talk paths is not registered, TRBOnet operator will not be able to receive and transmit to this talk groups.




To add an Audio Path for repeater in Capacity Plus mode click  button.

New Audio Path appears in the table.

Check the box in the first table column to make and receive Voice Calls from selected subscriber.

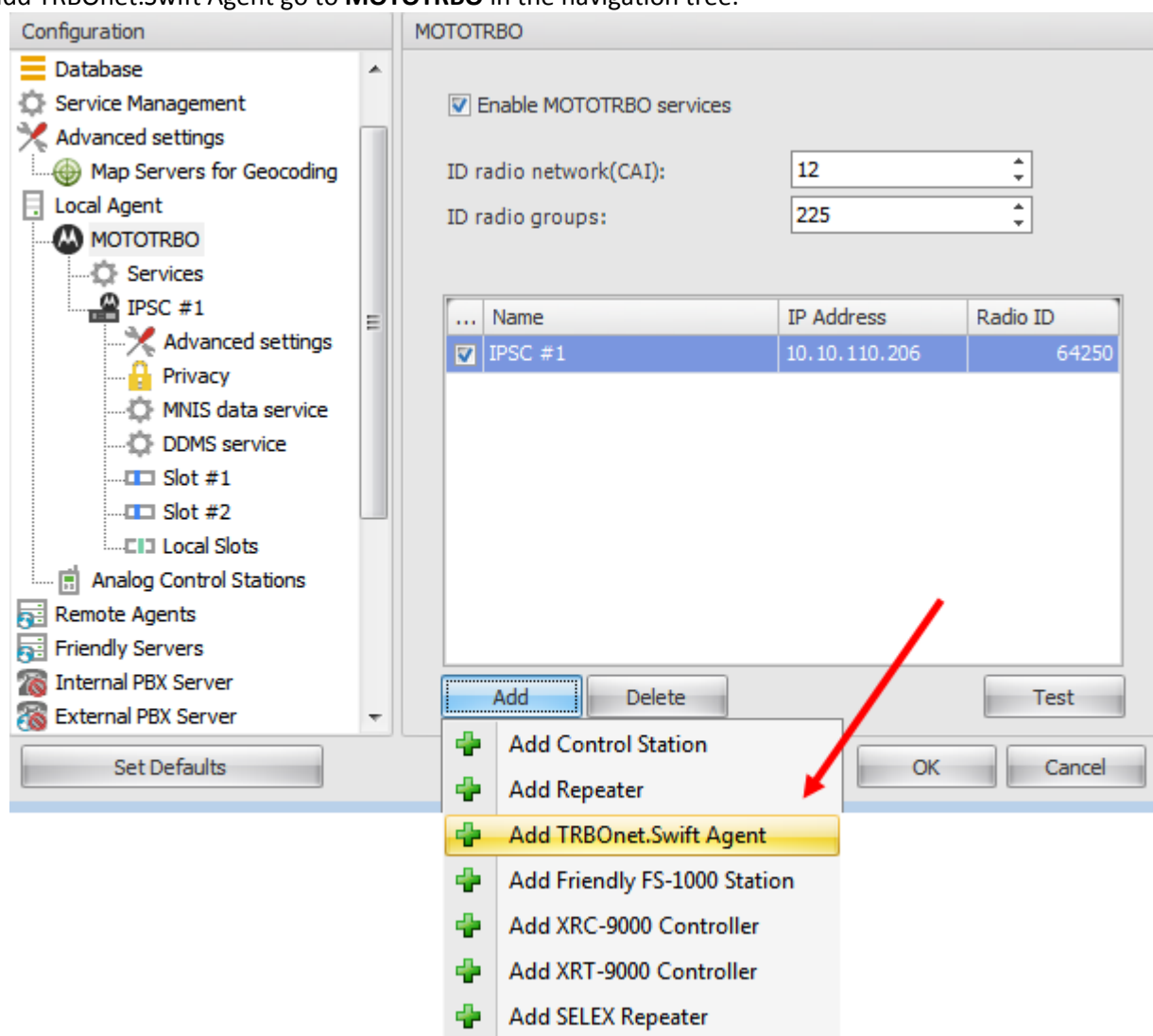
- **Name** - specify talk group name to display in the Dispatcher Console (**Name** column in the table);
- **Call Type** - select Call Type for the talk group in the dropdown list (Broadcast/Group/Private).
- **Group ID** – ID specify a radio ID of talk group to make a call to. Not applicable for private and broadcast calls.

To remove an Audio Path, click  button.

Add TRBOnet.Swift Agent

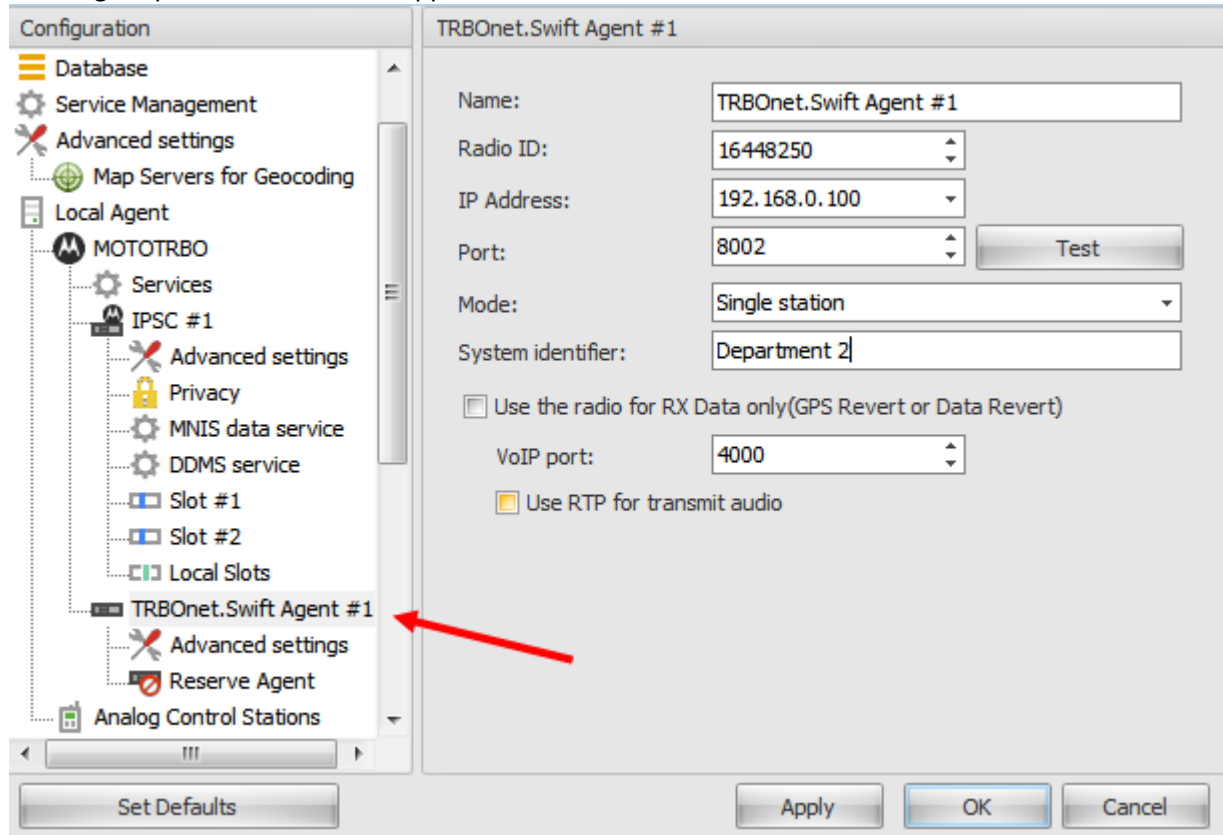
TRBOnet.Swift Agent functions as a gateway to receive and transmit voice and data.

To add TRBOnet.Swift Agent go to **MOTOTRBO** in the navigation tree:



Select **Add TRBOnet.Swift Agent** in the Dropdown list.

New Swift Agent parameters window appears:

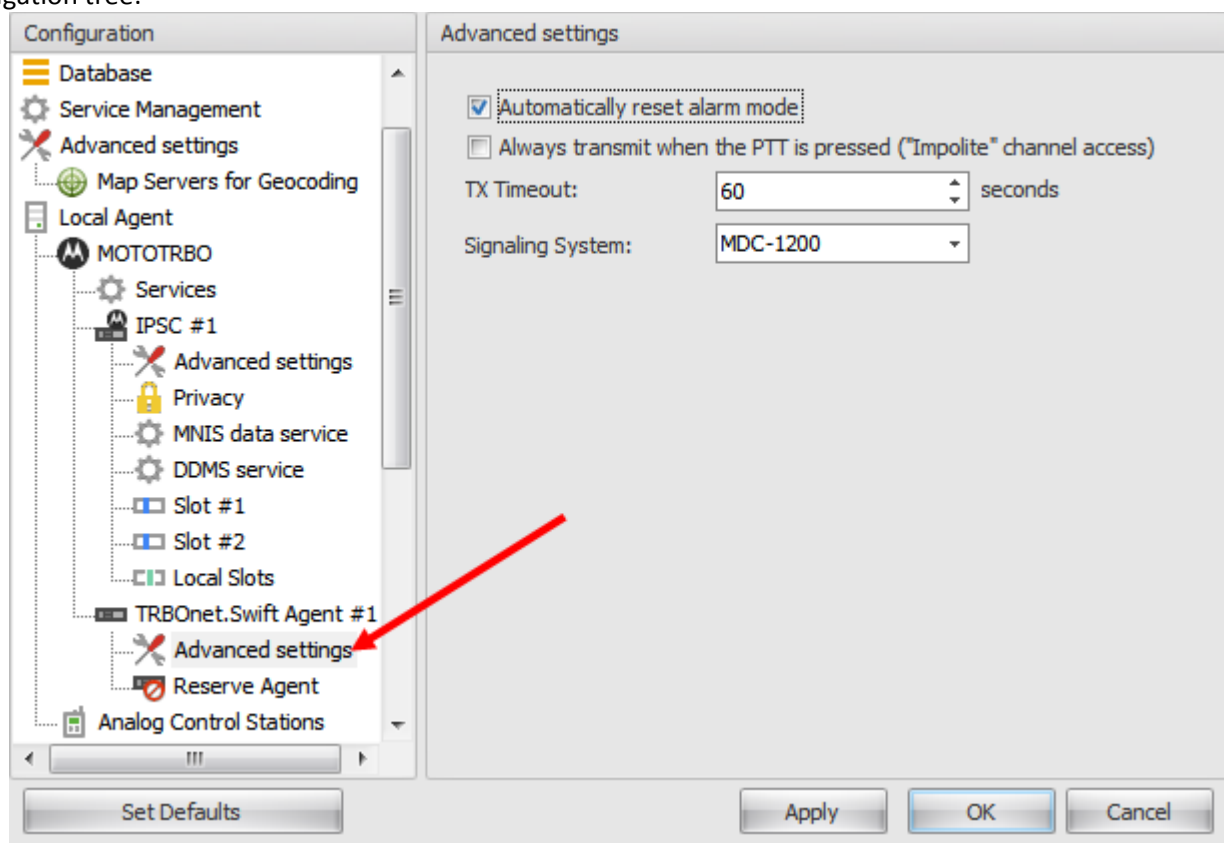


Specify the following new remote control station parameters:

- **Name** - specify Remote Control Station name to display in the Dispatcher Console;
- **Radio ID** - Set an individual ID that uniquely identifies Swift Agent. This ID is used by other calling radios when addressing the radio, for instance, when making a private call or sending a text message. Specify Radio ID for the new Swift Agent (max value for Capacity Plus systems – 65535);
- **IP Address** - select an IP Address of the new Swift Agent network interface;
- **Port** - specify port to connect to the new Swift Agent (8002 set by default);
- **Mode** - select mode for the new Swift Agent in the dropdown list;
- **System Identifier** - for Capacity Plus systems specify unique system identifier of the system for Swift Agents, Control Stations and repeaters;
- **Use the radio for RX data only** - this option configures the channel to receive only without any transmission capability.
- **VoIP port** - Port for audio communication. Select VoIP port (8002 set by default);
- **Use RTP for transmit audio** - check to use RTP protocol to transmit the audio.

TRBOnet.Swift Agent's Advanced Settings

To configure TRBOnet.Swift Agent's advanced settings select **TRBOnet.Swift Agent, Advanced settings** in the navigation tree:

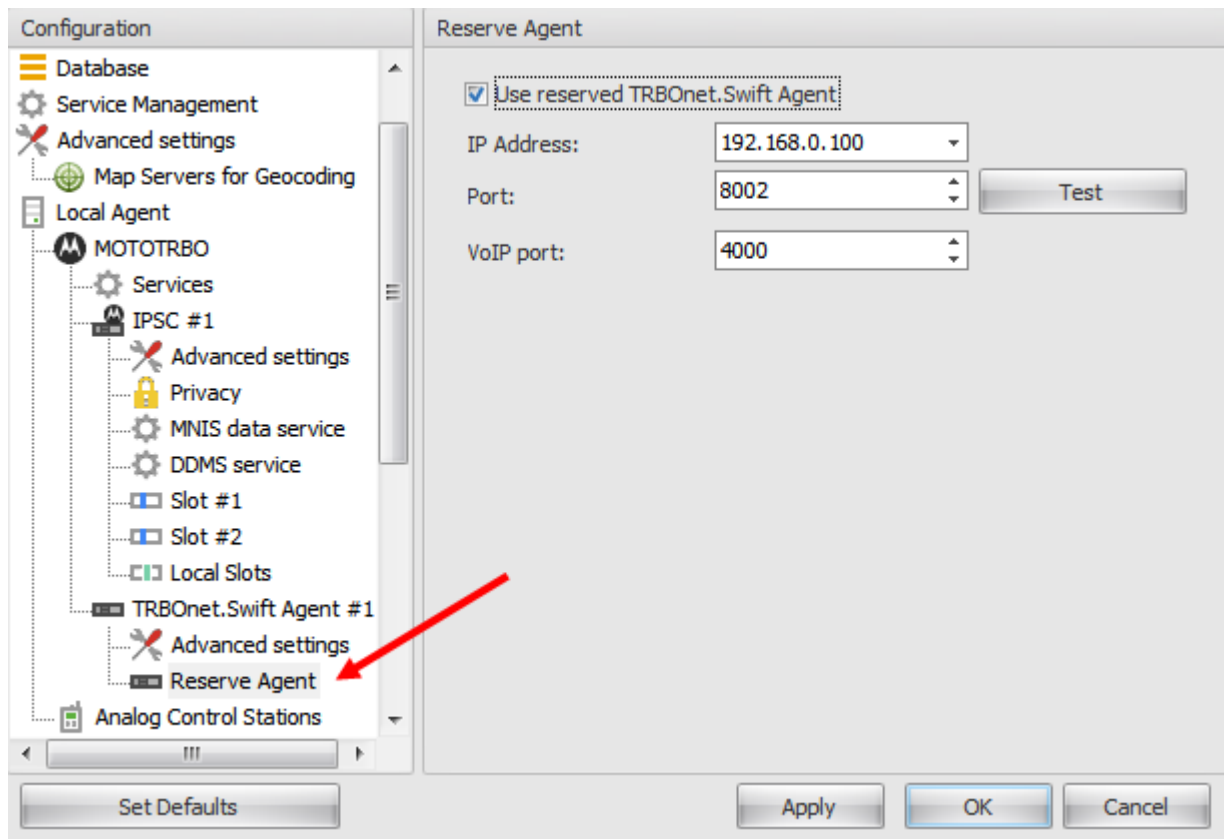


Specify the following advanced settings for Remote Control Station:

- **Automatically reset alarm mode** - Dispatcher can reset Alarm mode manually or using programmed button "Reset Alarm Mode" (set in Radio code plug). **Automatically reset alarm mode** option allows to reset Alarm mode automatically. It is recommended to enable this option;
- **Always transmit when PTT is pressed ("Impolite" channel access)** - the radio will always transmit when the Push-to-Talk (PTT) button is pressed (not available in a Capacity Plus Personality channel).
- **TX Timeout** - voice session limit. When Dispatcher starts any Voice Session in the Dispatch Console, TX will be interrupted after TX Timeout time count set in TRBOnet RadioServer Configurator.
- **Signaling system** - select signaling system in the dropdown list.
 - **MDC 1200** signaling is a Motorola data system using audio frequency shift keying (ASFK) using a 1,200 baud data rate. A general option is to enable or disable an acknowledgement (ack) data packet.
 - **SELECT 5 (5 Tone Signaling System)**. In the 5 Tone Signaling Systems, each radio has a unique numeric identity (e.g. 12345). To signal the number 12345, a sequence of 5 tones is sent. Sequences of audible tones of a very short duration are sent between radios. Most 5 tone sequences take less than half a second to send. Available for Private Call, Group Call, Emergency Call, status information.

Reserve Agent

Reserve Agent is used when a connection to Main TRBOnet.Swift Agent is lost.



Go to **Reserve Agent** in the Navigation Tree to set connection parameters:

- **IP Address** – input reserve agent IP address;
- **Port** – input TRBOnet.Swift Agent's port for incoming connections, configured in TRBOnet.Swift Agent.

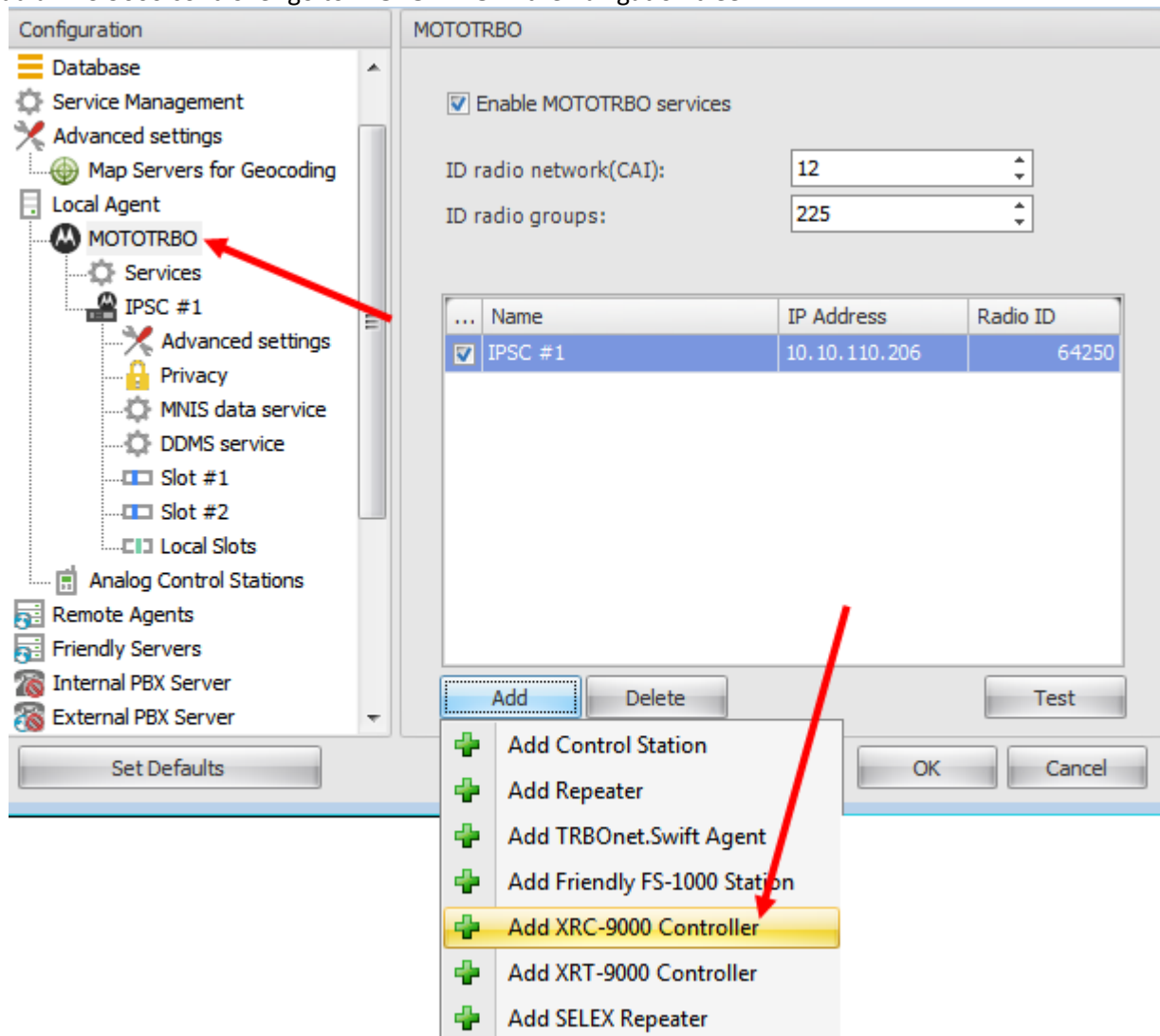
Click  button to check the connection;

- **VoIP Port** - Port for audio communication. Input VoIP port (4000 set by default);

Add XRC-9000 Controller

Connect Plus is a trunk system which consists of 50 sites numbers max. XRC 9000 - controller functions as site controller to provide free channel for Data transfer between sites and to manage data flow.

To add a XRC-9000 controller go to **MOTOTRBO** in the navigation tree:



The screenshot shows the MOTOTRBO configuration window. On the left is a navigation tree with the following structure:

- Configuration
 - Database
 - Service Management
 - Advanced settings
 - Map Servers for Geocoding
 - Local Agent
 - MOTOTRBO** (highlighted with a red arrow)
 - Services
 - IPSC #1
 - Advanced settings
 - Privacy
 - MNIS data service
 - DDMS service
 - Slot #1
 - Slot #2
 - Local Slots
 - Analog Control Stations
 - Remote Agents
 - Friendly Servers
 - Internal PBX Server
 - External PBX Server

At the bottom of the navigation tree is a "Set Defaults" button.

The main panel on the right is titled "MOTOTRBO" and contains the following elements:

- A checkbox labeled "Enable MOTOTRBO services" which is checked.
- Two input fields: "ID radio network(CAI):" with the value "12" and "ID radio groups:" with the value "225".
- A table with the following data:

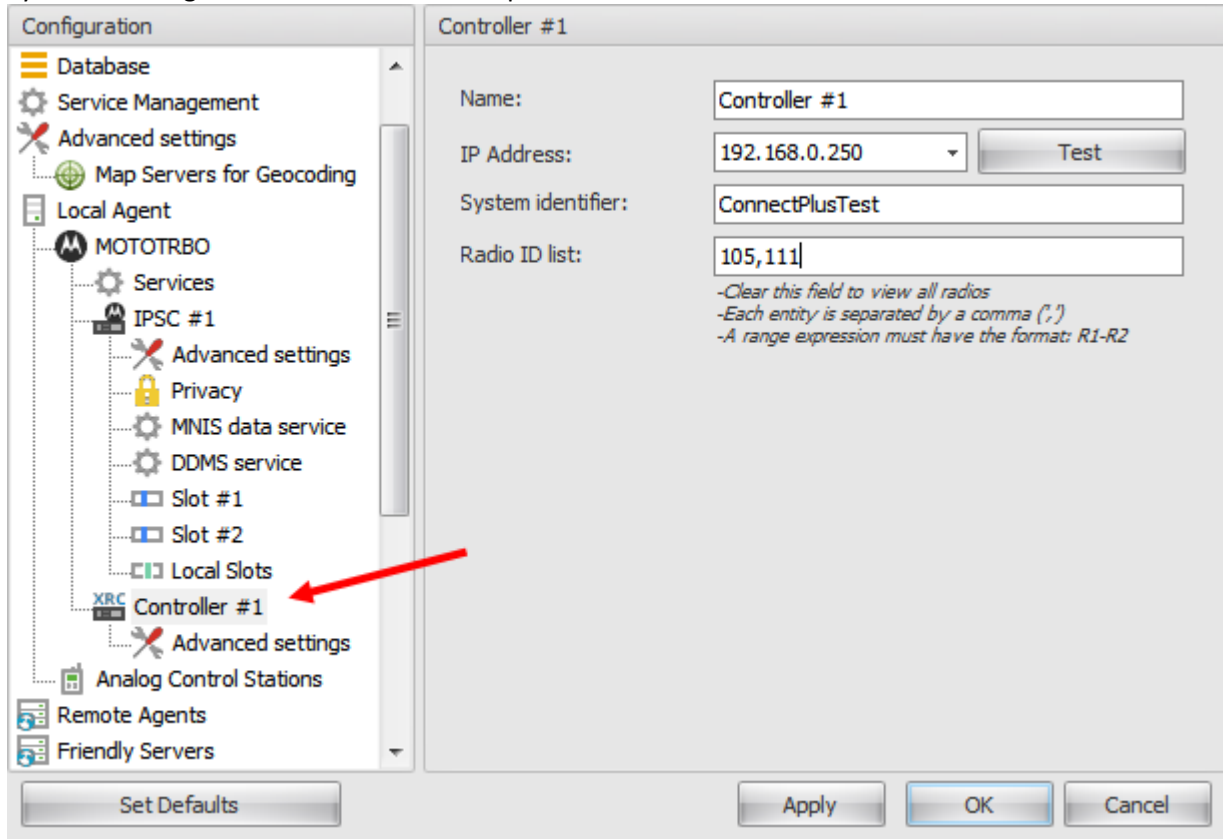
...	Name	IP Address	Radio ID
<input checked="" type="checkbox"/>	IPSC #1	10.10.110.206	64250
- Buttons: "Add", "Delete", "Test", "OK", and "Cancel".

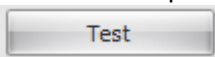
A red arrow points from the "Add" button to a dropdown menu that is open, showing the following options:

- + Add Control Station
- + Add Repeater
- + Add TRBOnet.Swift Agent
- + Add Friendly FS-1000 Station
- + Add XRC-9000 Controller** (highlighted with a yellow background and a red arrow)
- + Add XRT-9000 Controller
- + Add SELEX Repeater

Select **Add XRC-9000 Controller** in the dropdown list.

Specify the following new XRC-9000 controller parameters:

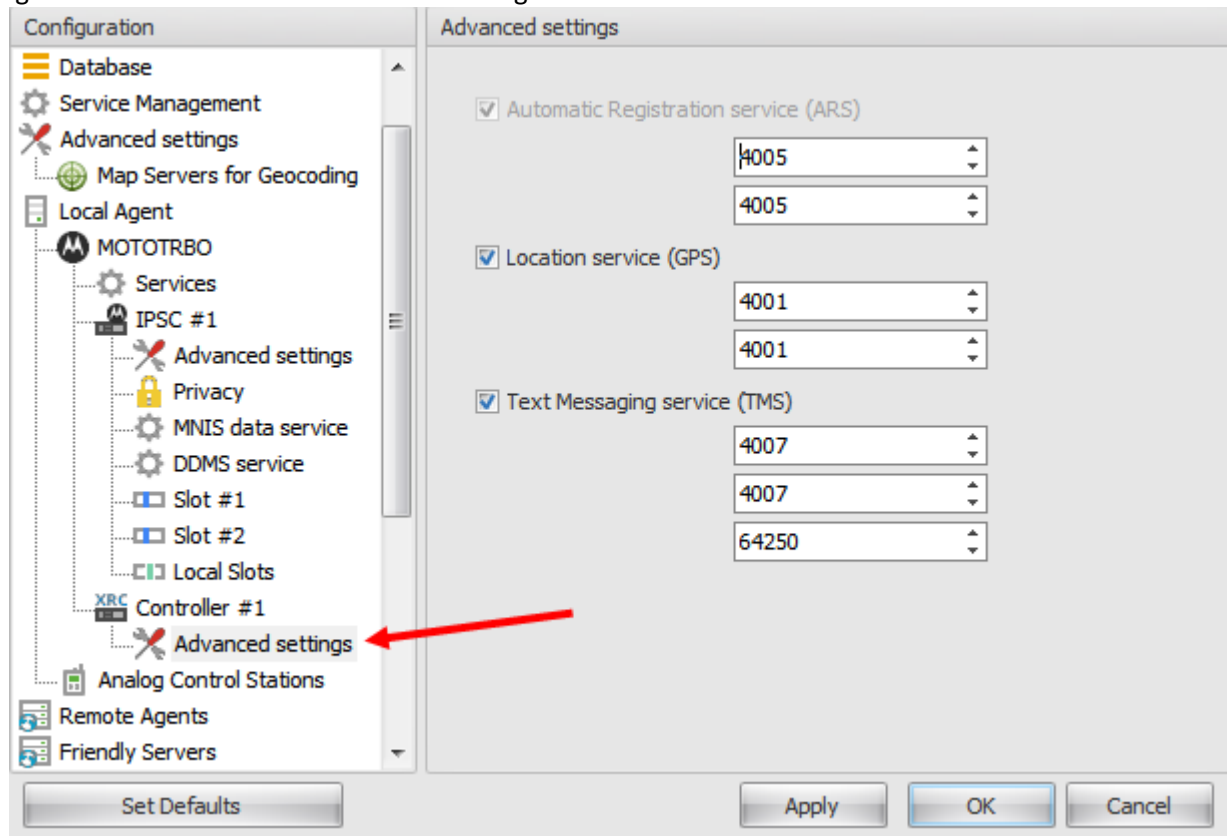


- **Name** - specify XRC-9000 Controller name to display in the Dispatcher Console;
- **IP Address** – specify an IP Address of the new XRC-9000 Controller network interface. Click  button to check the connection;
- **System Identifier** - type in system identifier which should be the same through all controllers for the Connect Plus system;
- **Radio ID list** – specify a list of radios to receive data from according to the following rules:
 - ✓ To receive the data from all radios in the system – leave this field blank;
 - ✓ To receive the data from certain radios – separate every Radio ID by comma, e.g. 105,106,111, etc.
 - ✓ To receive the data from radios range – input Radio IDs according to the following example: 105-111.

Note: Input Radios IDs only, do not mention Radio Names or «Radio» word.

Advanced Settings

Configure XRC-9000 Controller advanced settings:



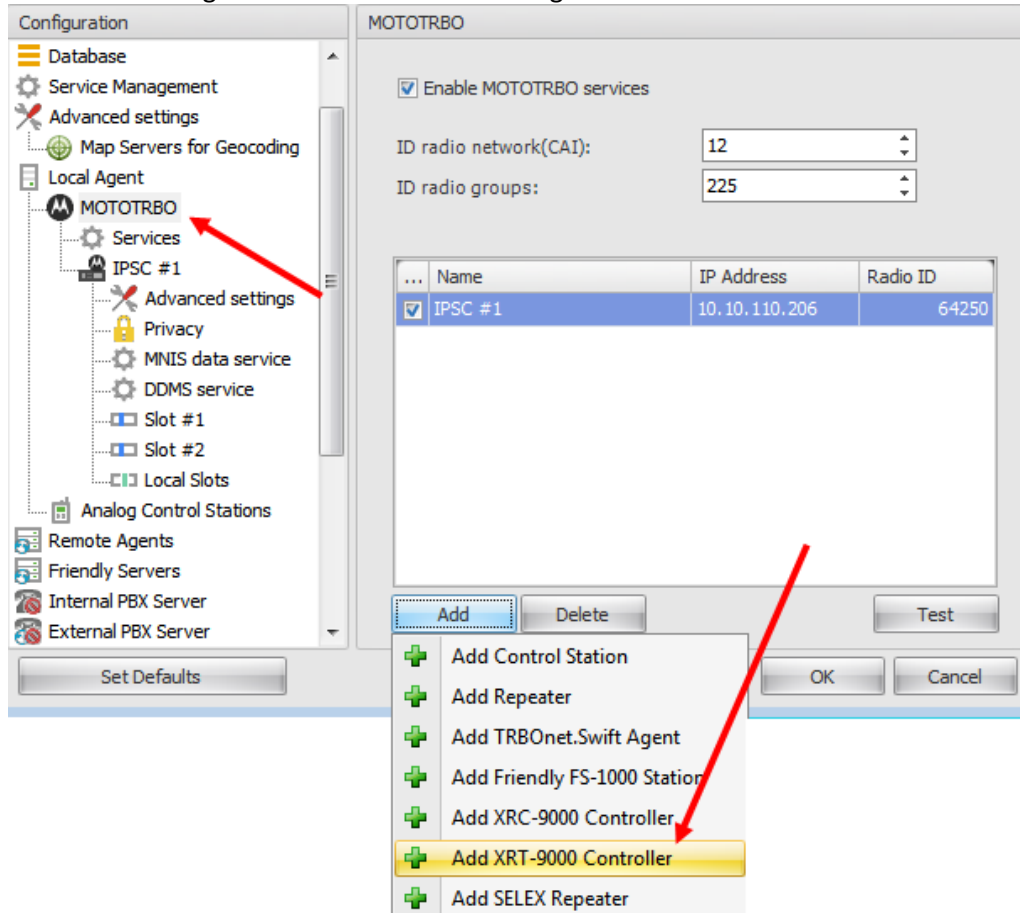
- **Automatic Registration service (ARS)** - provides an automated data application registration for the radio. When the radio powers up, the radio automatically registers with the server. This feature is used with data applications, i.e. any data traffic on this channel that is associated with an application server such as MOTOTRBO Text Messaging or MOTOTRBO Location Services. Enabled by default.
 - **Controller port** - specify controller's port for ARS service. 4005 set by default;
 - **Local port** - local port of PC with TRBOnet Dispatch Software. Specify free port for new XRC-9000 controller (4005 set by default);
- **Location service (GPS)** - radio can send its coordinates when it is in Global Positioning coverage area. GPS settings can be configured in a radio code plug or on **Service Management** tab;
 - **Controller port** - specify controller's port for Location service. 4001 set by default;
 - **Local port** - local port of PC with TRBOnet Dispatch Software. Specify free port for new XRC-9000 controller (4001 set by default);
- **Text Messaging service (TMS)** - service for text message transmission;
 - **Port** - select controller's port for Text Messaging service. 4007 set by default;
 - **Local port** - local port of PC with TRBOnet Dispatch Software. Specify free port for new XRC-9000 controller (4001 set by default);
 - **Dispatcher ID** - Connect Plus trunk logic for subscriber radio resides in its Connect Plus Option Board. MOTOTRBO™ Connect Plus Option Board programming software is used for Connect Plus Option Board configuration. Type in Dispatcher ID from Connect Plus Option Board code plug. The Dispatcher ID should belong to TRBOnet RadioServer account in the Connect Plus system.

Add XRT-9000 Controller

To be able to work properly with TRBOnet RadioServer XRT9000 controller should be pre-configured, the detailed step-by step guide is available from Knowledge Base: [“How to setup XRT9000”](#)

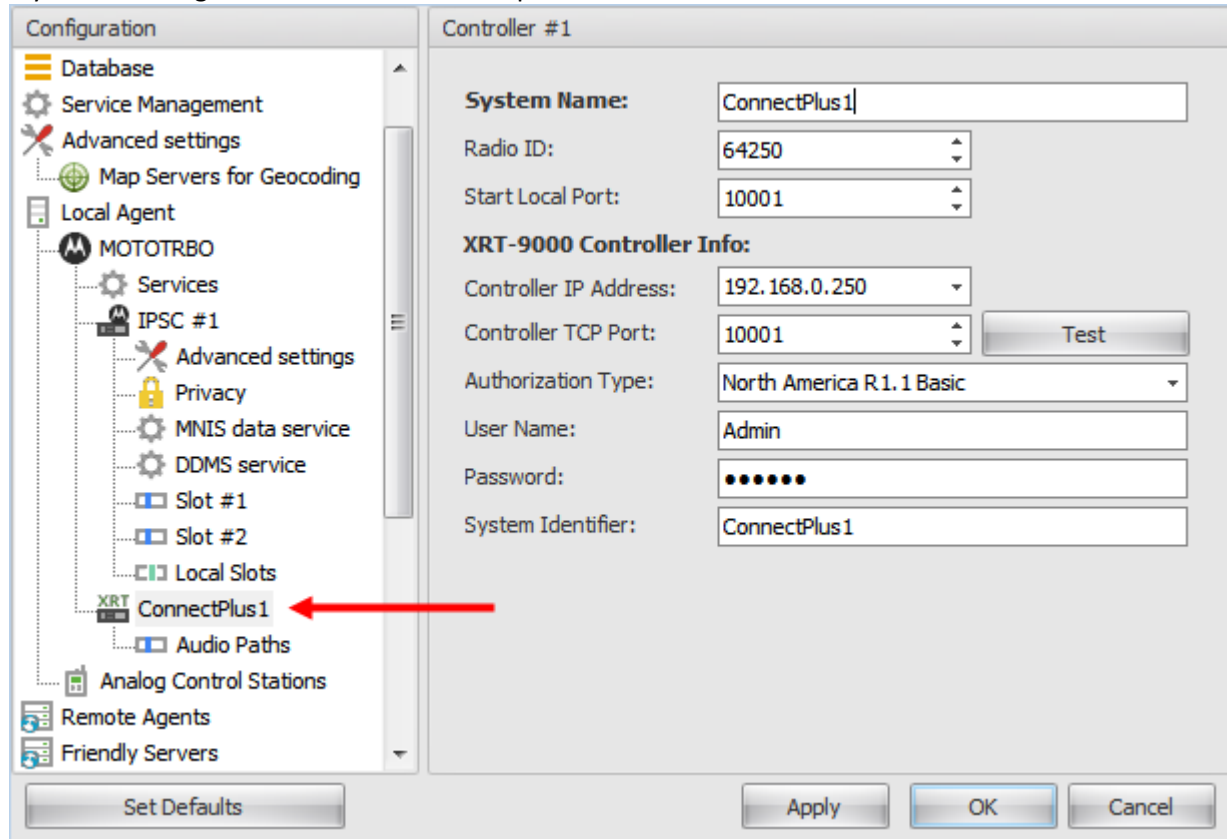
XRT-9000 controller functions as a voice gateway connected to each XRC-9000 controller in the system.

To add a XRT-9000 controller go to **MOTOTRBO** in the navigation tree:



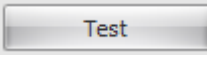
Select **Add XRT-9000 controller** in the dropdown list.

Specify the following new XRT-9000 controller parameters:



- **System Name** - specify XRT-9000 controller name to display in the Dispatcher Console;
- **Start Local Port** - specify free local port of the PC with TRBOnet Dispatch Software installed

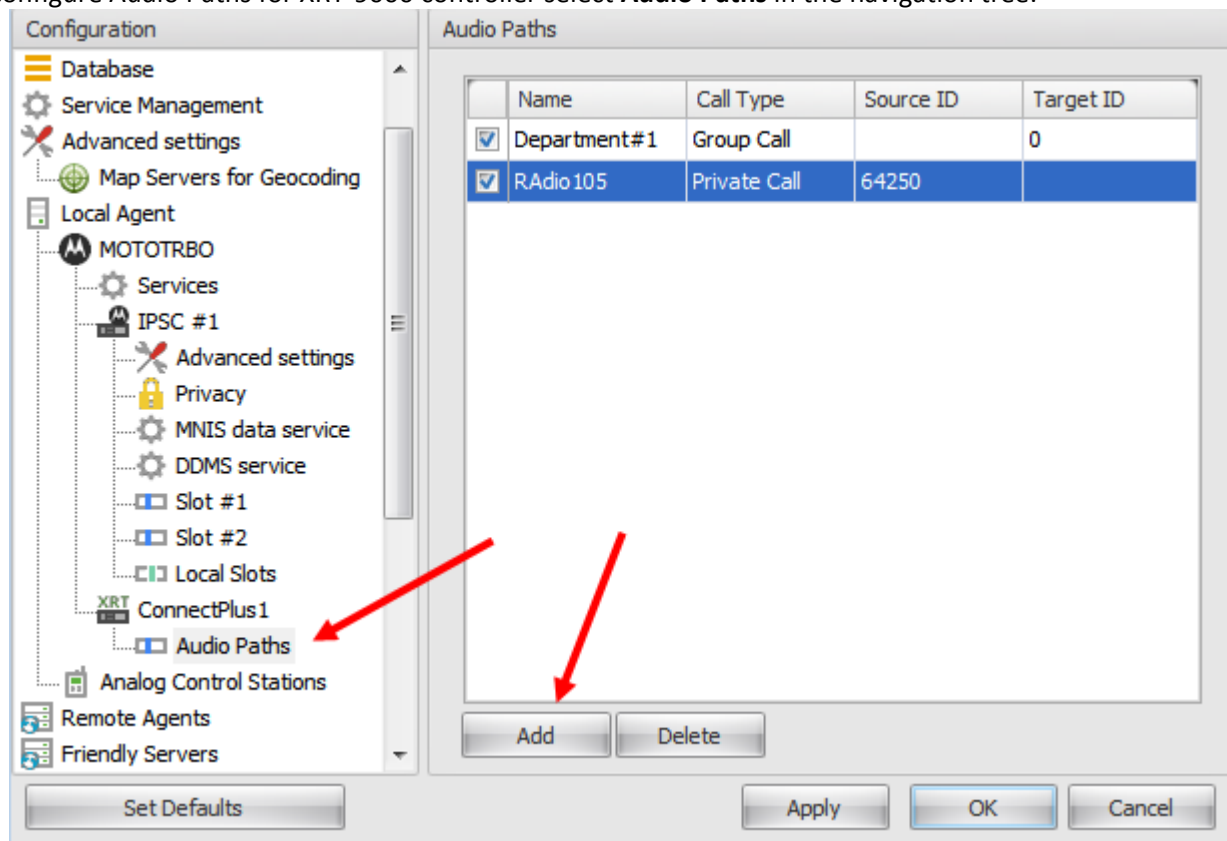
XRT-9000 controller info – specify XRT 9000 controller connection parameters:

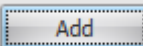
- **Controller IP Address** - specify an IP Address of the new XRT-9000 controller network interface;
- **Radio ID** - set an individual virtual radio ID (max value for Capacity Plus systems – 65535). Virtual Radio ID required to do the following:
 - ✓ Make all types of Voice Calls from XRT-9000 Controller to radios, Dispatchers and groups
 - ✓ Send commands (e.g. Remote Monitor);
- **Controller TCP Port** - port to transfer Data via TCP protocol. The default port of XRT9000 controller is 10001, can be differ in your installation. Click  button to check the connection;
- **Authorization Type** - select Authorization Type in the dropdown list according to your region;
- **User Name** - type in User name from XRT-9000 controller's configuration;
- **Password** - type in a password for user from XRT-9000 controller's configuration;
Username & password should belong to TRBOnet Connect Plus account and configured in Connect Plus, refer to the article above “How to setup XRT9000”.
- **System Identifier** - type in system identifier which should be the same through all controllers for the Connect Plus system;

Audio Paths

Audio Paths are the talk paths of the system to make and receive Voice Calls, in general they are talk groups. TRBOnet requires registering all talk paths from Connect Plus system in its configuration. If talk paths is not registered, TRBOnet operator will not be able to receive and transmit to this talk groups.

To configure Audio Paths for XRT-9000 controller select **Audio Paths** in the navigation tree:




To add an Audio Path for XRT-9000 controller click  button.

New Audio Path appears in the table.

Check the box in the first table column to make and receive Voice Calls from selected subscriber.

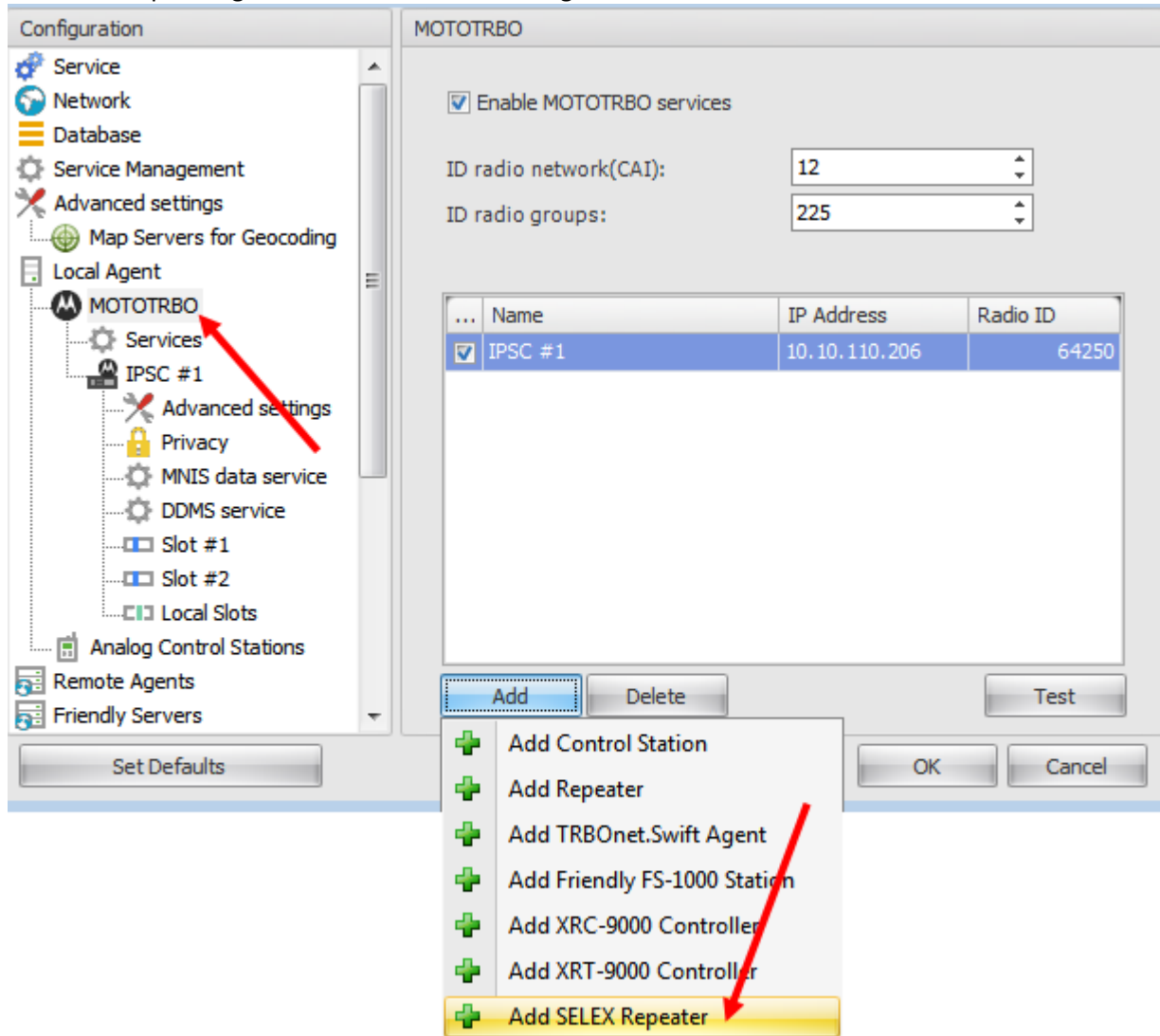
- **Name** - specify talk group name to display in the Dispatcher Console (**Name** column in the table);
- **Call Type** - select Call Type for the talk group in the dropdown list (Broadcast/Group/Private).
- **Source ID** – indicates a radio ID of call initiator, in general will display TRBOnet's radio ID as a caller for group calls to subscriber. If TRBOnet has more than 1 radio ID in Connect Plus system (for different dispatchers, for example) talk paths should be registered for all of them.
- **Group ID** – ID specify a radio ID of talk group to make a call to. Not applicable for private and broadcast calls.

To remove an Audio Path, click  button.

Add a Selex Repeater

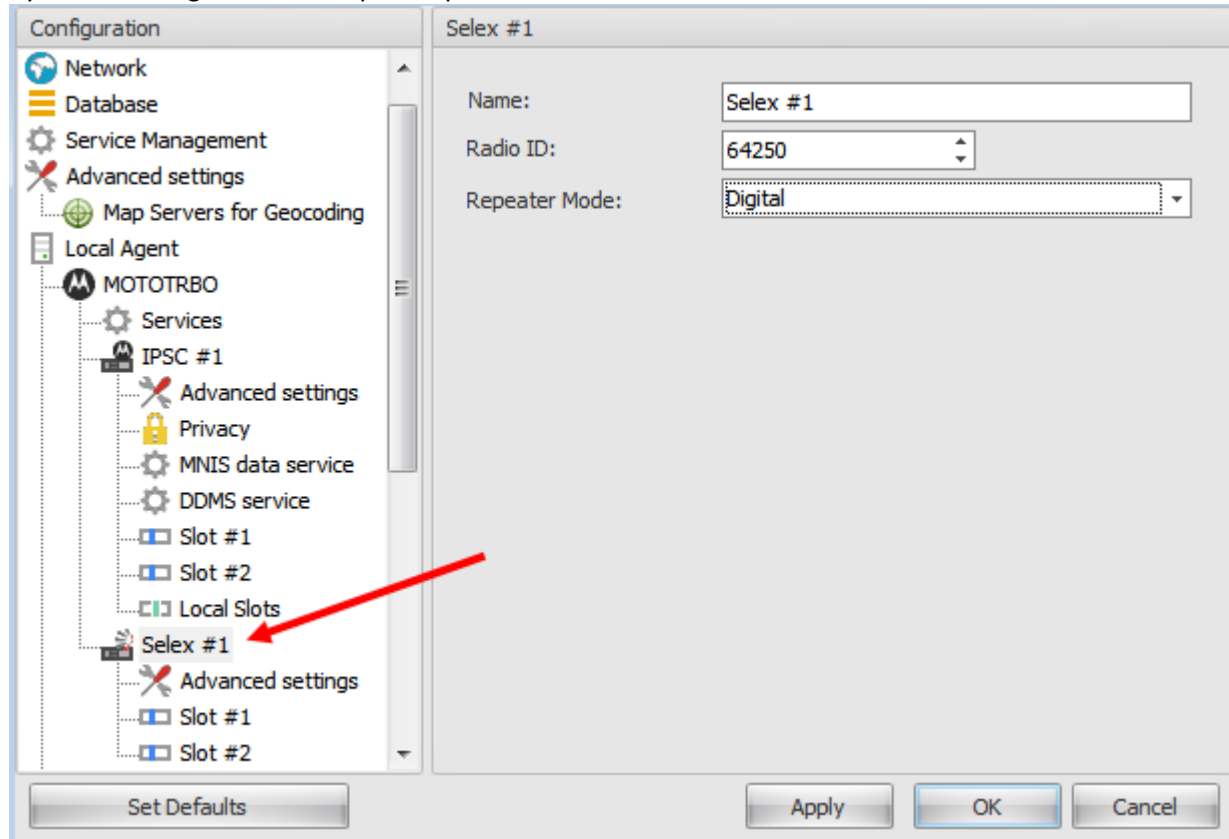
Selex repeater is configured as a Stand-Alone repeater which supports connections to MOTOTRBO™ radios to transmit voice and data in digital, analog and mixed mode.

To add a Selex repeater go to **MOTOTRBO** in the navigation tree:



Click  button and select **Add Control Station** in the navigation tree.

Specify the following new Selex repeater parameters:

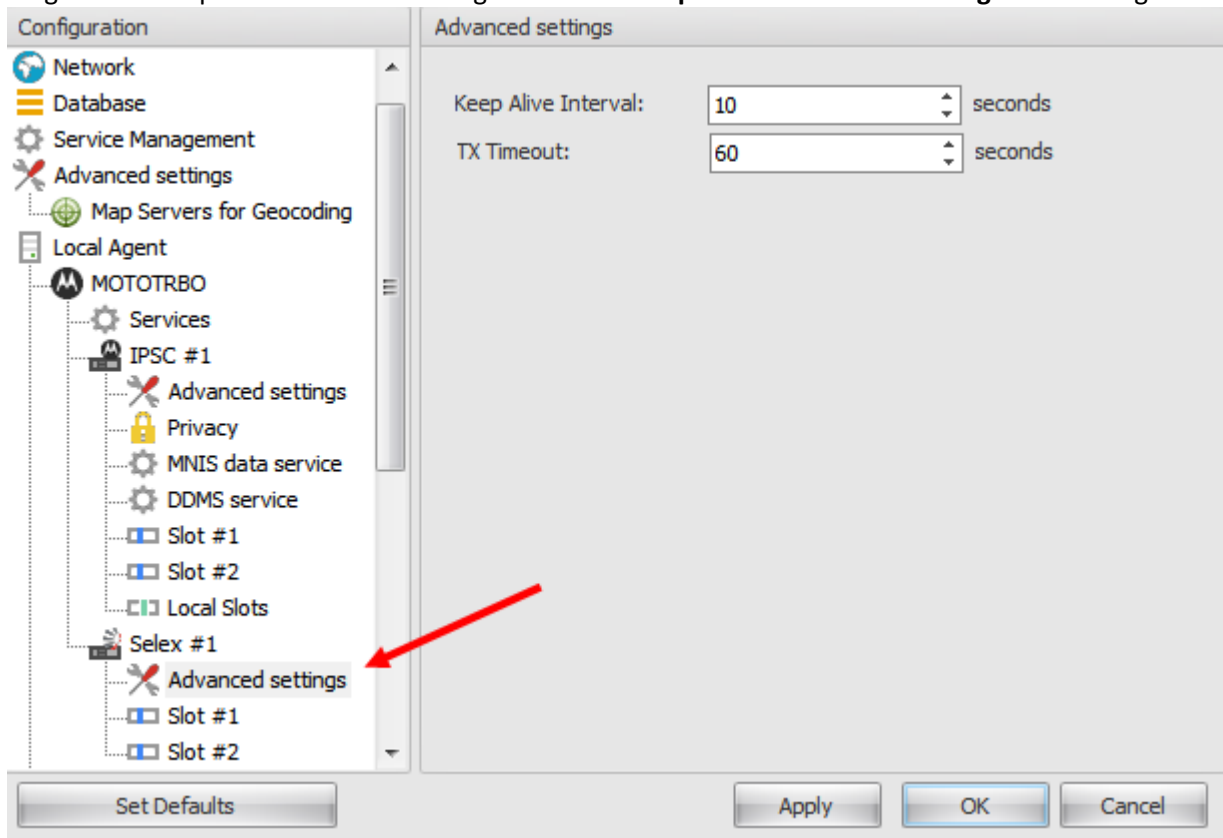


The screenshot shows a configuration window titled 'Configuration' on the left and 'Selex #1' on the right. The left pane has a tree view with the following structure: Network, Database, Service Management, Advanced settings, Map Servers for Geocoding, Local Agent, MOTOTRBO, Services, IPSC #1, Advanced settings, Privacy, MNIS data service, DDMS service, Slot #1, Slot #2, Local Slots, Selex #1 (highlighted with a red arrow), Advanced settings, Slot #1, Slot #2. The right pane has three fields: Name (Selex #1), Radio ID (64250), and Repeater Mode (Digital). At the bottom are buttons for Set Defaults, Apply, OK, and Cancel.

- **Name** - specify Selex repeater name to display in the Dispatcher Console;
- **Radio ID** - set an individual ID that uniquely identifies the radio. This ID is used by other calling radios when addressing the radio, for instance, when making a private call or sending a text message. Specify Radio ID for the new Control Station (max value for Capacity Plus systems – 65535);
- **Repeater mode** – select mode in the dropdown list (Digital/Analog/Mixed).

Selex Repeater Advanced Settings

To configure Selex repeater advanced settings select **Selex repeater - Advanced settings** in the navigation tree:

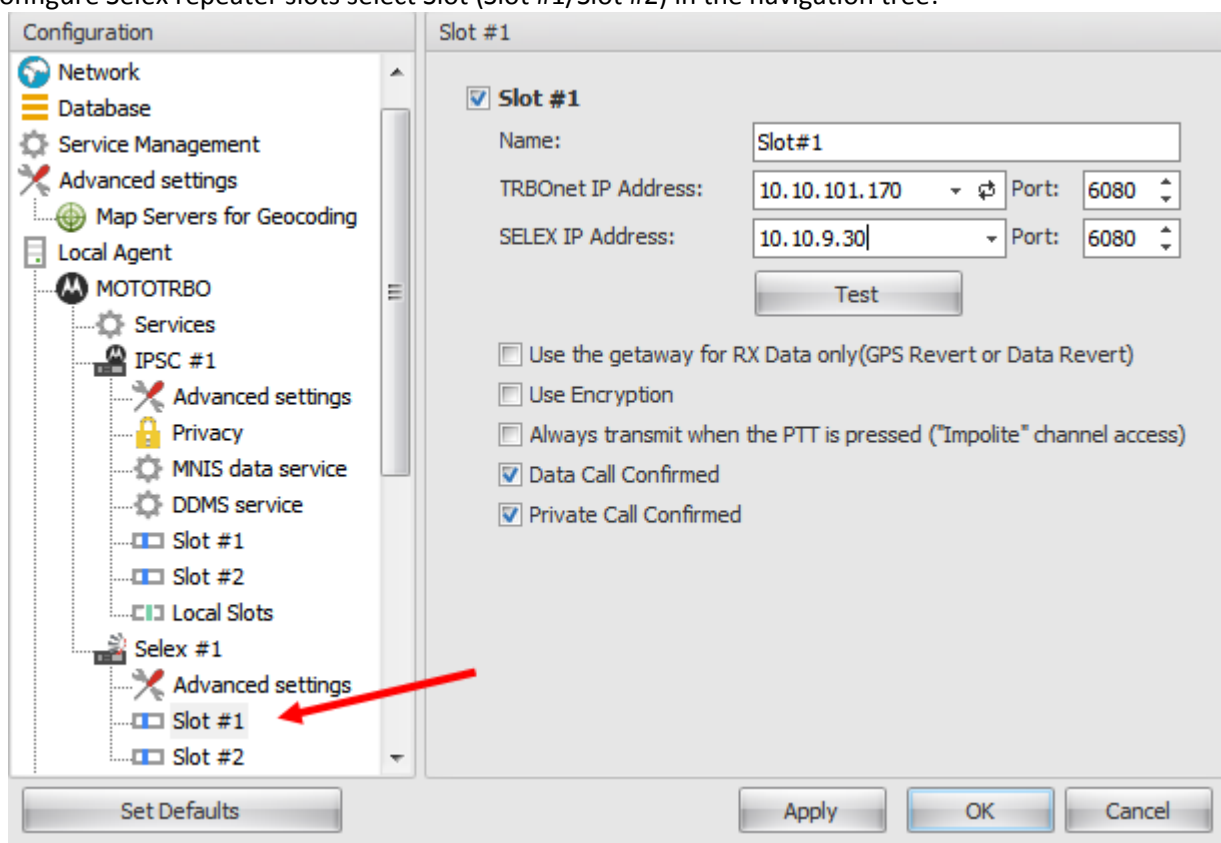


Specify the following repeater's advanced settings:

- **Keep Alive Interval** – time interval in seconds for TRBOnet RadioServe to check the connection to Selex repeater. Set Keep Alive Interval in seconds (10 is set by default);
- **TX Timeout** - voice session limit. When Dispatcher starts any Voice Session in the Dispatch Console, TX will be interrupted after TX Timeout time count, set in TRBOnet RadioServer Configurator.

Selex Repeater Slots

Selex repeater has two available slots (in **Digital** or **Mixed** mode) to transmit voice and data.
 To configure Selex repeater slots select Slot (Slot #1/Slot #2) in the navigation tree:



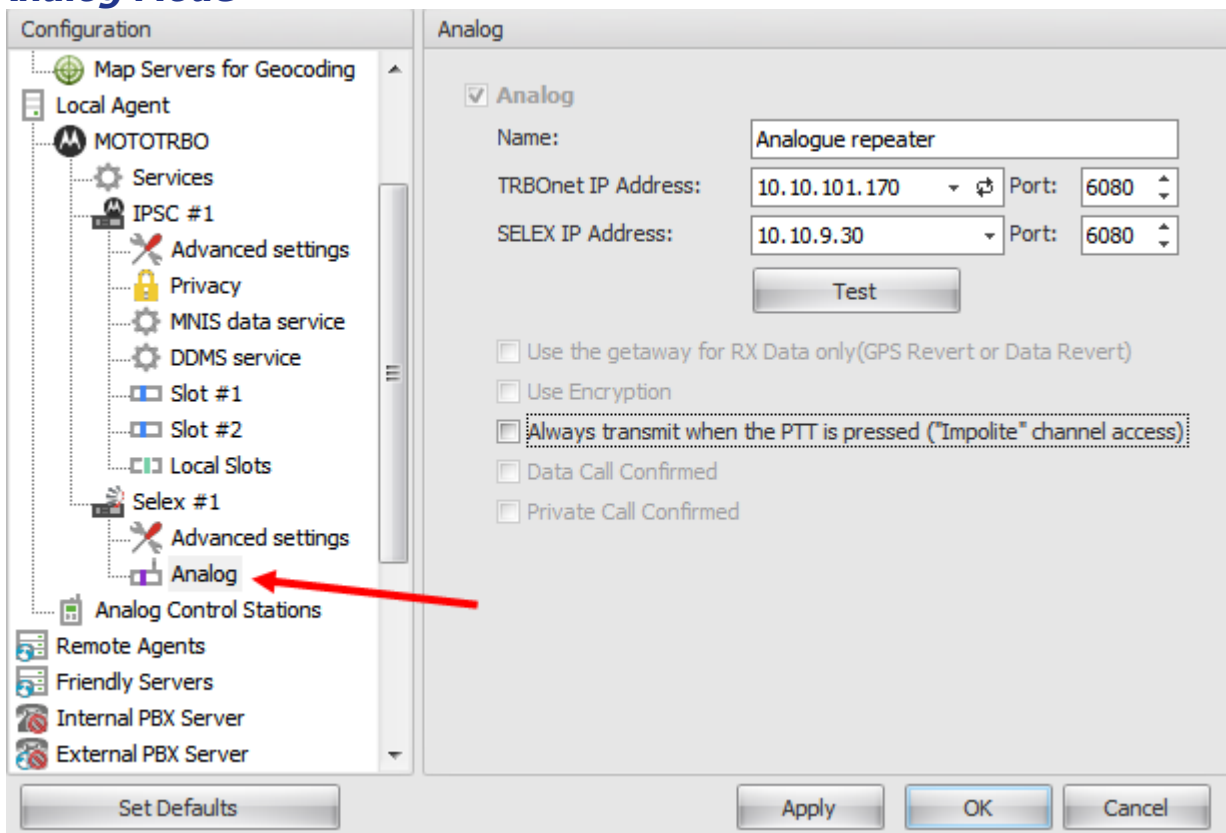
Specify the following slot parameters:

- **Name** - specify slot's name in the system;
- **TRBOnet IP Address** – specify PC with TRBOnet Dispatch Software IP Address. Specify available port of the PC;
- **Selex IP Address** – specify an IP Address of Selex repeater (set in the repeater's configuration). Specify available port of the PC;

Click  button to check the connection.

- **Use the gateway for RX data only (GPS Revert or Data Revert)** - this option configures the channel to receive data only without any transmission capability;
- **Use Encryption** – check this option to encrypt voice and data traffic over IP.
- **Always transmit when PTT is pressed ("Impolite" channel access)** - the radio will always transmit when the Push-to-Talk (PTT) button is pressed (not available in a Capacity Plus Personality channel);
- **Private Call Confirmed** - sets Private calls on the current digital channel as confirmed. By default, Private calls are unconfirmed (disabled if **RX Only** is enabled).

Analog Mode



To configure analog connection mode select Analog in the navigation tree:

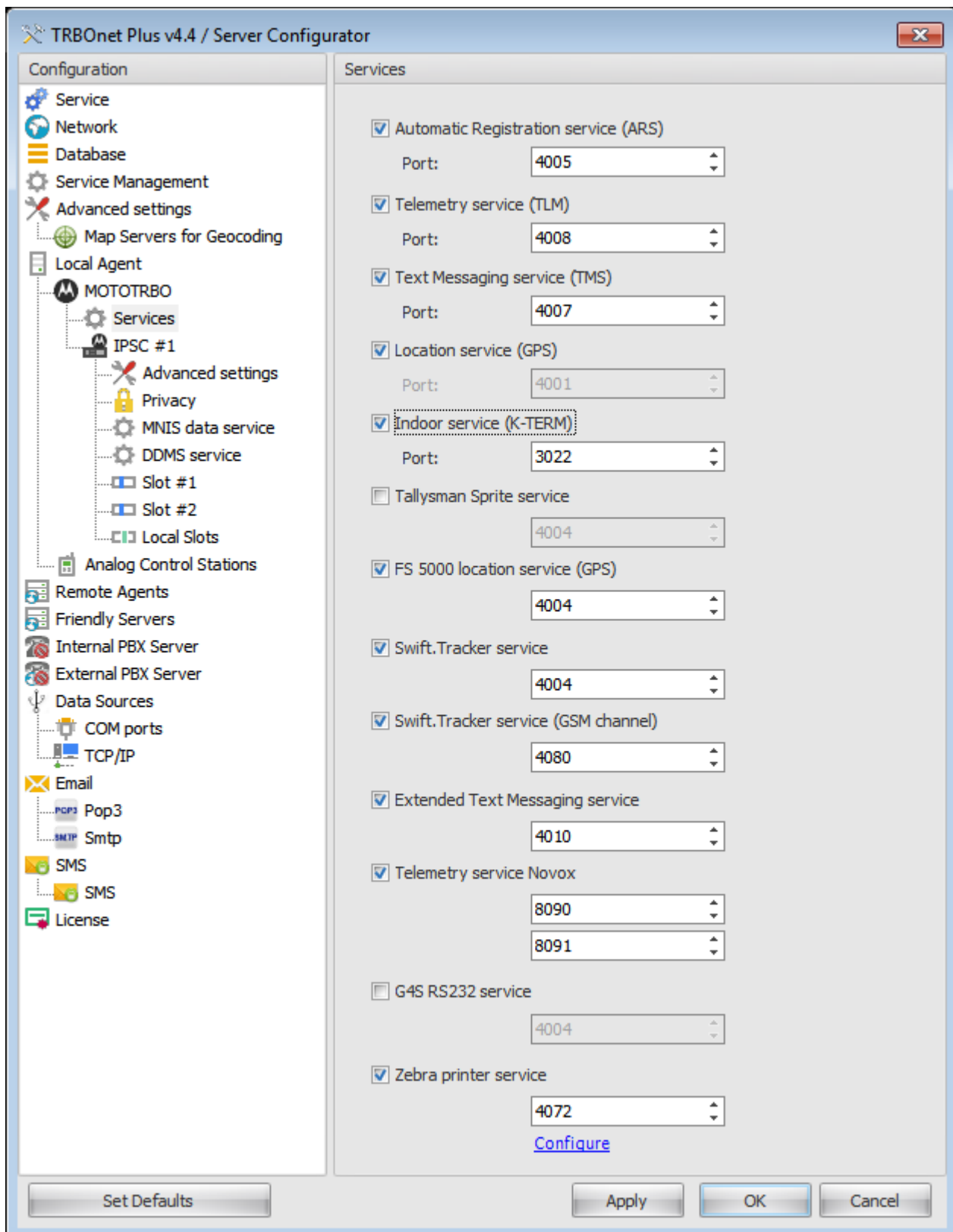
Specify the following analog mode settings:

- **Analog mode** – the checkbox is not available because analog mode is known to be present in the selected mode;
- **Name** - specify Selex repeater in the analog mode name to display in the Dispatcher Console;
- **TRBOnet IP Address** – specify PC with TRBOnet Dispatch Software IP Address. Specify available port of the PC (available when Selex repeater slots are disabled);
- **Selex IP Address** – specify an IP Address of Selex repeater (set in the repeater's configuration). Specify available port of the PC (available when Selex repeater slots are disabled);

Click  button to check the connection.

- **Use the gateway for RX data only** – the option is not available in the analog mode;
- **Use Encryption** - check this option to encrypt voice and data traffic over IP;
- **Always transmit when PTT is pressed ("Impolite" channel access)** - the radio will always transmit when the Push-to-Talk (PTT) button is pressed (not available in a Capacity Plus Personality channel);
- **Private Call Confirmed** - the option is not available in the analog mode.

Services



The screenshot shows the 'TRBOnet Plus v4.4 / Server Configurator' window. The left sidebar contains a tree view with categories like Configuration, Service, Network, Database, Service Management, Advanced settings, Map Servers for Geocoding, Local Agent, and Remote Agents. The 'Services' category under 'Local Agent' is selected. The main panel displays a list of services with checkboxes and port number dropdown menus.

Service	Port
<input checked="" type="checkbox"/> Automatic Registration service (ARS)	4005
<input checked="" type="checkbox"/> Telemetry service (TLM)	4008
<input checked="" type="checkbox"/> Text Messaging service (TMS)	4007
<input checked="" type="checkbox"/> Location service (GPS)	4001
<input checked="" type="checkbox"/> Indoor service (K-TERM)	3022
<input type="checkbox"/> Tallysman Sprite service	4004
<input checked="" type="checkbox"/> FS 5000 location service (GPS)	4004
<input checked="" type="checkbox"/> Swift.Tracker service	4004
<input checked="" type="checkbox"/> Swift.Tracker service (GSM channel)	4080
<input checked="" type="checkbox"/> Extended Text Messaging service	4010
<input checked="" type="checkbox"/> Telemetry service Novox	8090 8091
<input type="checkbox"/> G4S RS232 service	4004
<input checked="" type="checkbox"/> Zebra printer service	4072

Buttons at the bottom: Set Defaults, Apply, OK, Cancel. A 'Configure' link is visible below the Zebra printer service port.

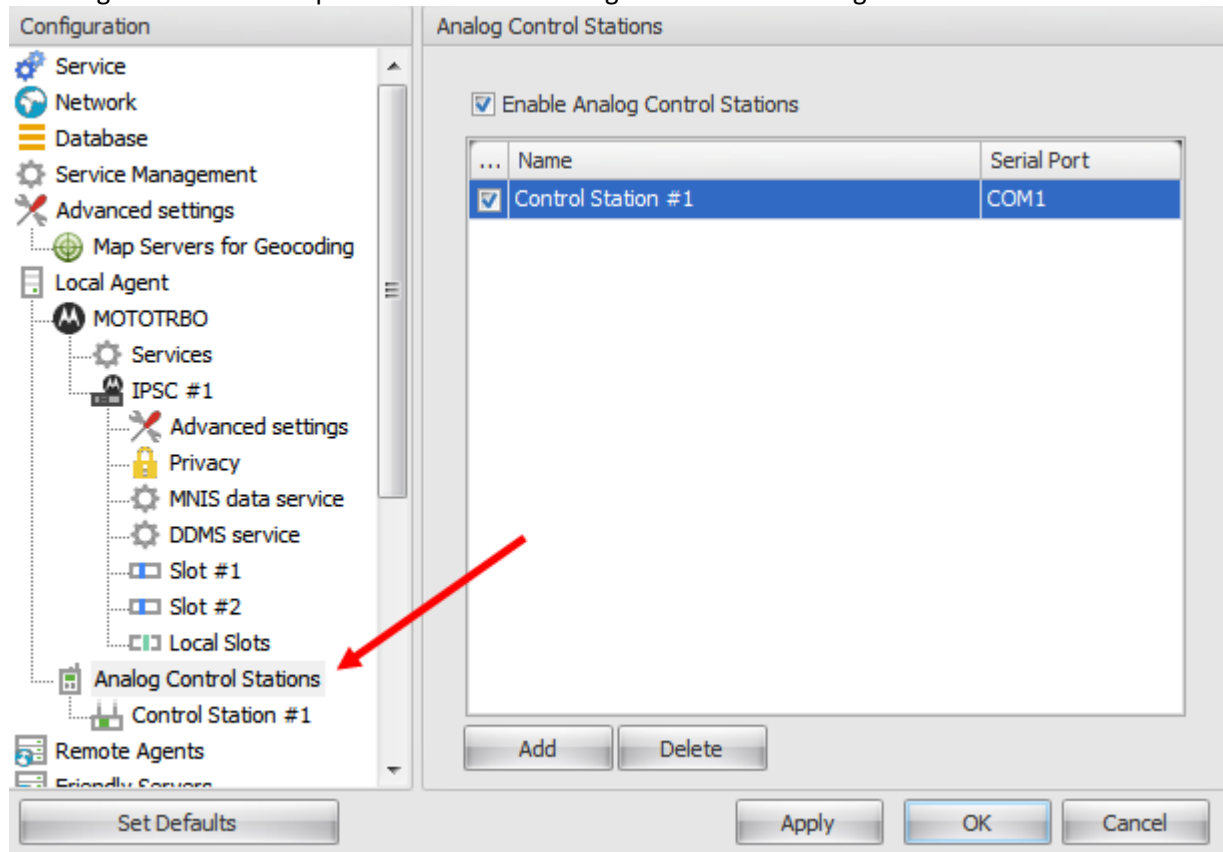
You can configure services to use. Go to **Services** and check services that will be used:

- **Automatic Registration Service (ARS)** - provides an automated data application registration for the radio. When the radio powers up, the radio automatically registers with the server. This feature is used with data applications, i.e. any data traffic on this channel that is associated with an application server such as MOTOTRBO Text Messaging or MOTOTRBO Location Services.
 - **Port** - local port for ARS service. 4005 set by default;
- **Telemetry service (TLM)** - the wireless transmission and reception of measured quantities for remotely monitoring environmental conditions or equipment parameters.
 - **Port** - local port for telemetry service. 4008 set by default;
- **Text Messaging service (TMS)** - service for text message transmission.
 - **Port** - local port for Text Messaging service. 4007 set by default;
- **Location Service (GPS)** - radio can send its coordinates when it is in Global Positioning coverage area.
 - **Port** - local port for Location service. 4001 set by default;
- **Indoor Service (K-TERM)** - service for indoor positioning where satellite navigation is not available.
 - **Port** - local port for Indoor service. 3022 set by default;
- **Tallysman Sprite service** - service for autonomous event and aggregated event reporting to provide significant reduction in GPS data overhead.
 - **Port** - local port for Tallysman Sprite service. 4004 set by default;
- **FS 5000 location service** - GPS data package transmitting service. Uses FS5000 Option Board.
 - **Port** - local port for FS 5000 location service. 4004 set by default;
- **Swift.Tracker service** - service for coordinates and data package transmitting via radio channel using Swift.Tracker TR001.M1 device.
 - **Port** - local port for Swift.Tracker service. 4004 set by default;
- **Swift.Tracker service (GSM channel)** - service for coordinates and data package transmitting via radio channel and reserved GSM channel using Swift.Tracker TR001.M1 device.
 - **Port** - local port for Swift.Tracker service. 4080 set by default;
- **Extended Text Messages service** - a special function to send detailed preconfigured templates with the help of the special TRBOnet Dispatch Software application.
 - **Port** - local port for Extended Text Messages service. 4080 set by default;
- **Telemetry service NOVOX** - system of telemetry transducers to transmit telemetry data.
 - **Requests port** - local port for requests. 8090 set by default;
 - **Events port** - local port for events. 8091 set by default;
- **G4S RS232** – custom development;
- **Zebra printer service** - service to print Job Tickets. Zebra printer connects to radio via Bluetooth. Radios should have Bluetooth technology maintenance.
 - **Port** - local port for Zebra printer service. 4072 set by default;

Analog Control Stations

TRBOnet Dispatch Software allows using Analog Radios as Control Stations.

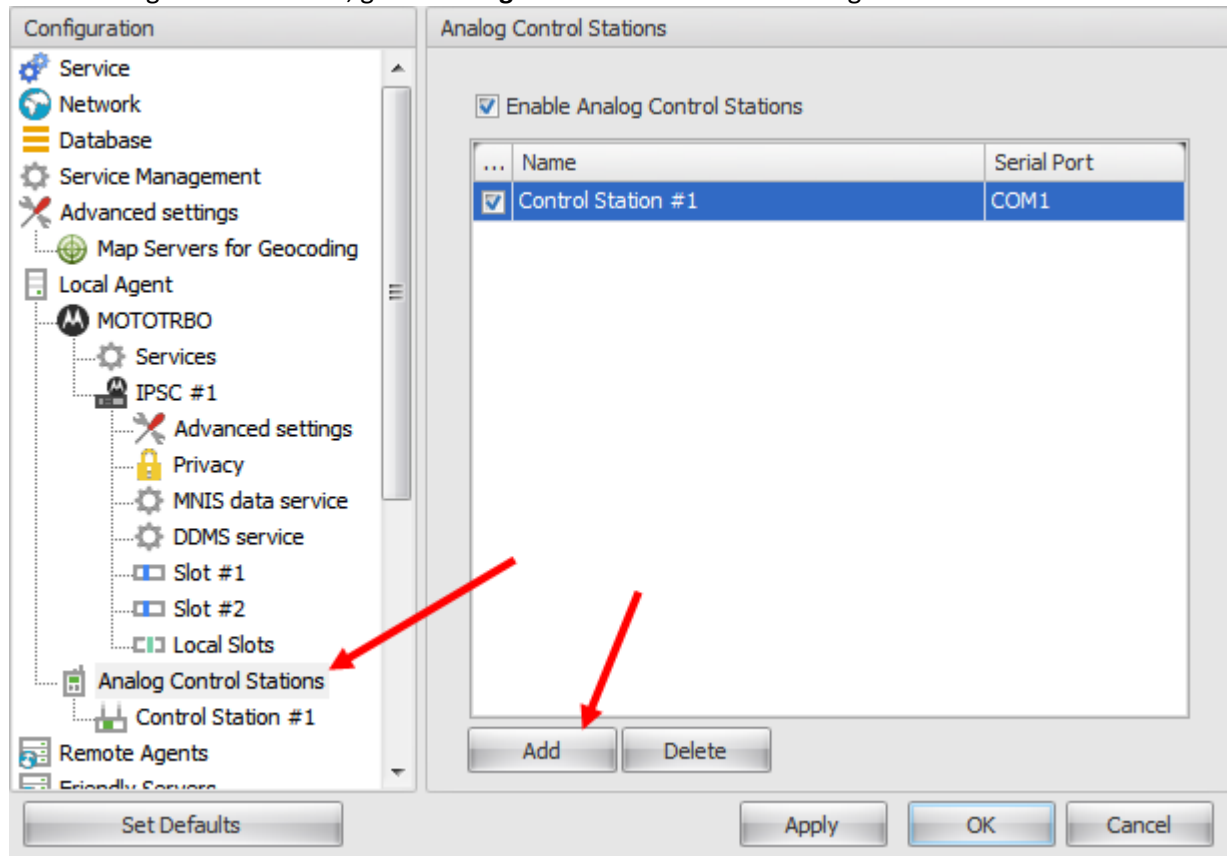
To set Analog Control Stations parameters select Analog Stations in the navigation tree:

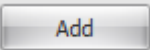


Check **Enable Analog Control Stations** to work with Analog Radios in the system.

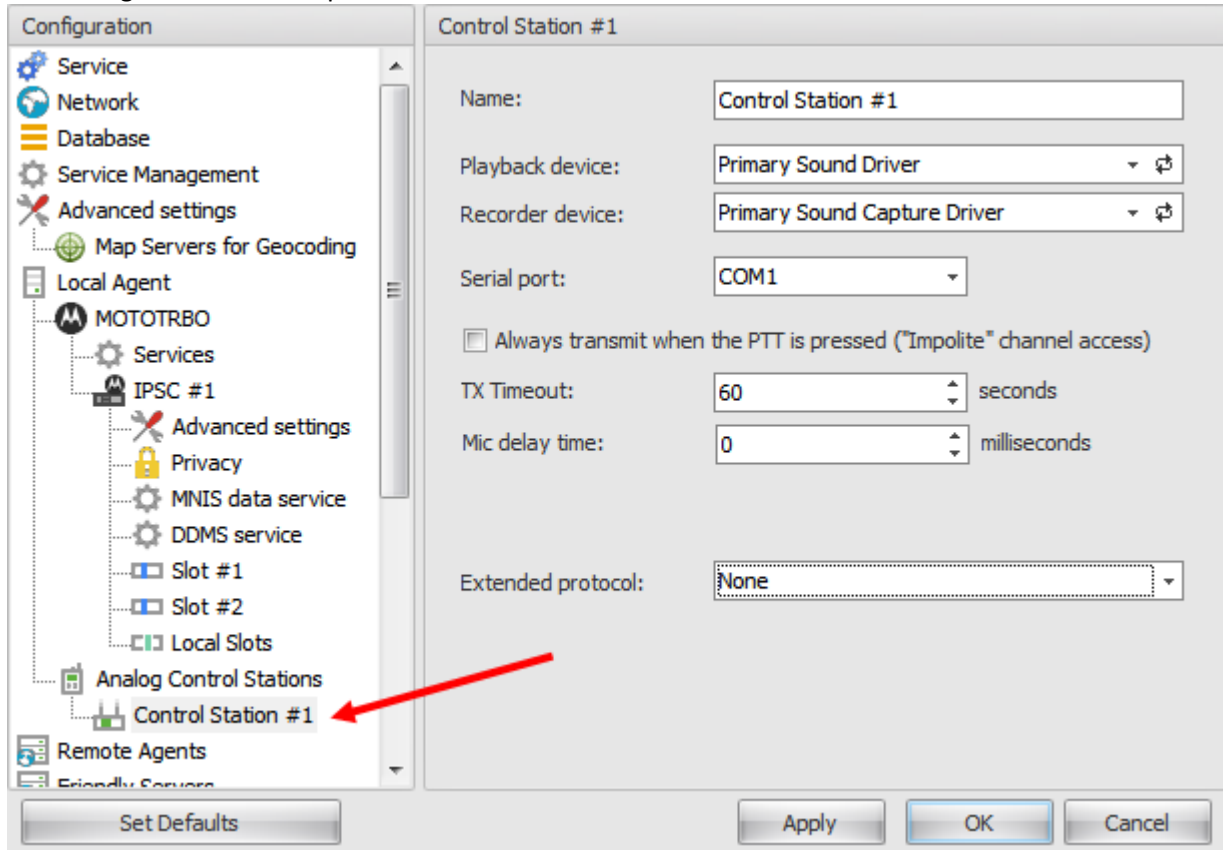
Add an Analog Control Station

To add an Analog Control Station, go to **Analog Control Stations** in the navigation tree:



Click  button to add an Analog Control Station.

Set new Analog Control Station parameters in the window:

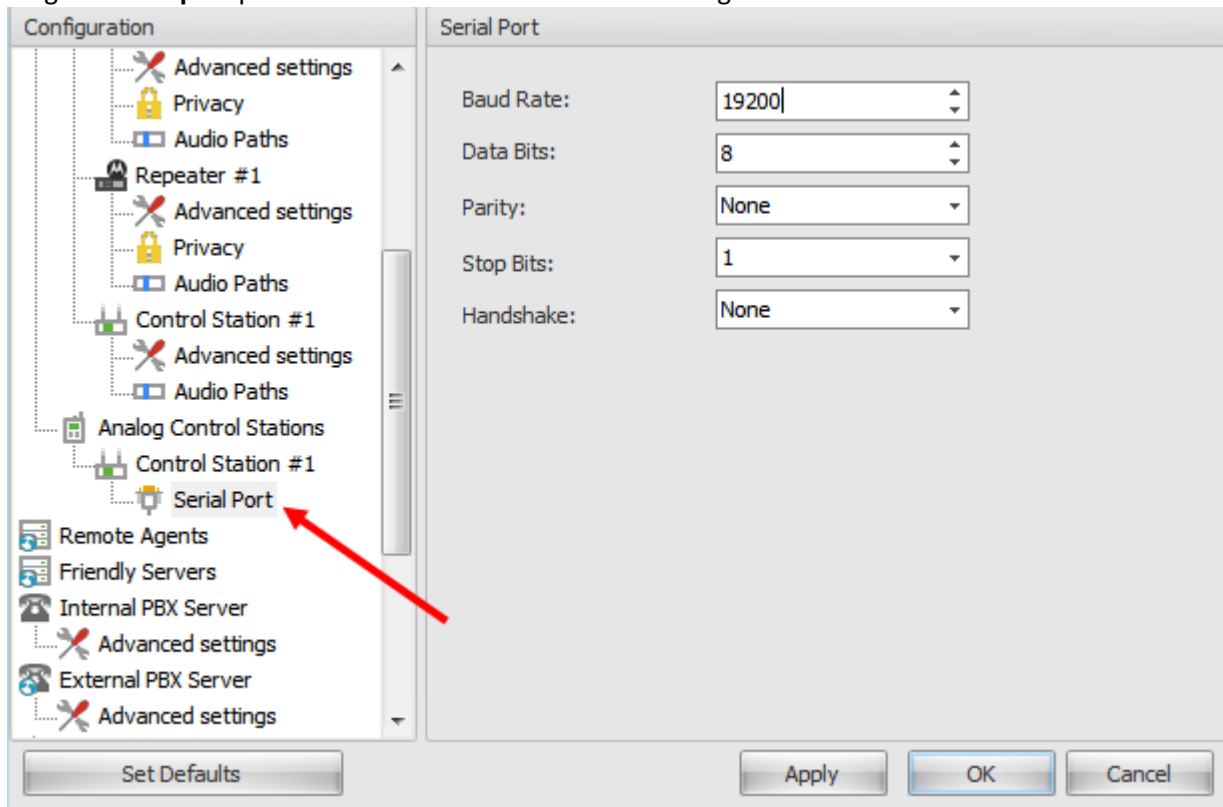


- **Name** – specify the name for new analog Control Station in the system;
- **Playback device** - select the playback device connected to Control Station in the dropdown list;
- **Recorder device** - select the recording device connected to Control Station in the dropdown list;
- **Serial port** – the port should be set to the Analog Radio PINs to set the high signal level for PTT button. Select serial port in the dropdown list;
- **Always transmit when PTT is pressed ("Impolite" channel access)** - the radio will always transmit when the Push-to-Talk (PTT) button is pressed (not available in a Capacity Plus Personality channel).
- **TX Timeout** - voice session limit. When Dispatcher starts any Voice Session in the Dispatch Console, TX will be interrupted after TX Timeout time count set in TRBOnet RadioServer Configurator.
- **Mic delay time** – specify delay time interval in milliseconds between PTT push and the moment voice communication starts;
- **Extended protocol** – select **None**, if your radio does not support extended protocol. Select **IC-F1721D v1.01** if the Radio supports the extended protocol.

Serial Port

Note: Available when Extended protocol for Analog Control Station selected

To configure **Serial port** parameters select Serial Port in the Navigation tree:

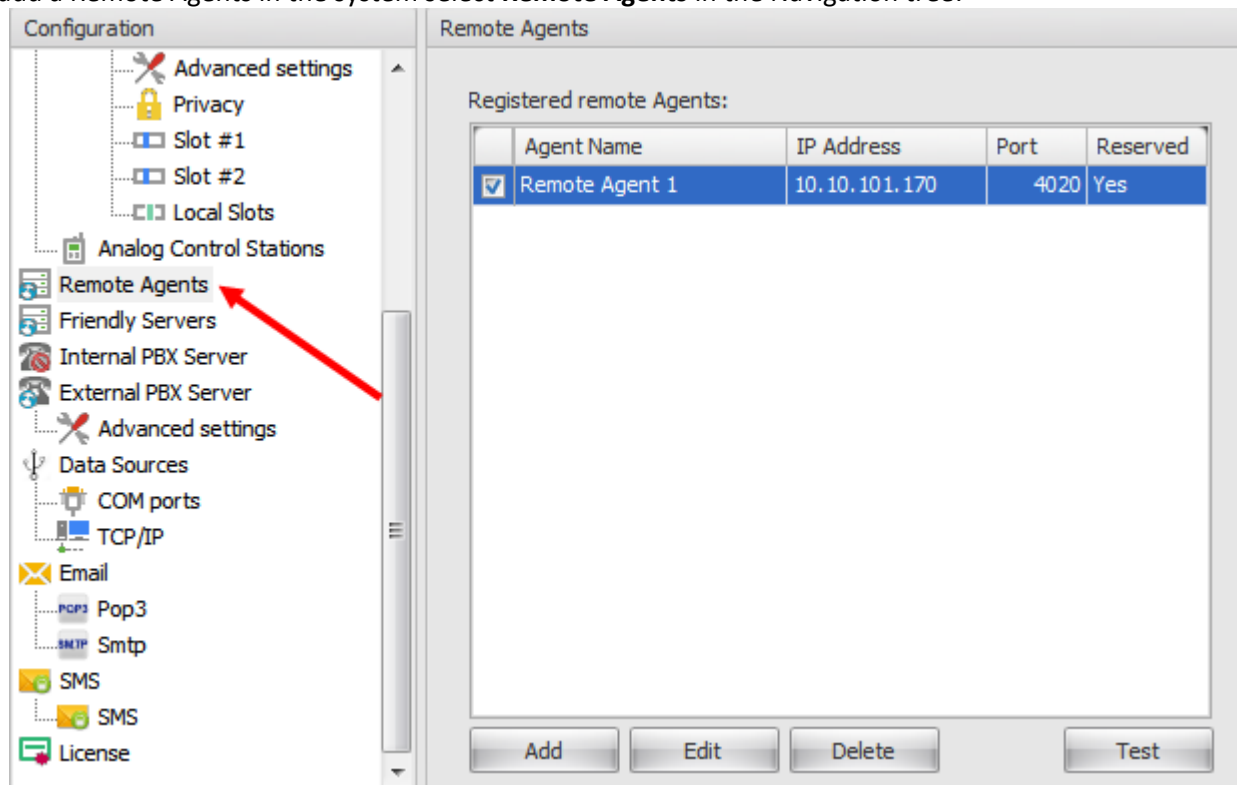


Specify the same Serial Port settings as settings of the device connected to the Serial Port.

Remote Agents

Use Remote Agent to connect to Local Agent. Remote Agents is the hardware gateway to manage Control Stations' parameters.

To add a Remote Agents in the system select **Remote Agents** in the Navigation tree:



Configuration

- Advanced settings
- Privacy
- Slot #1
- Slot #2
- Local Slots
- Analog Control Stations
- Remote Agents**
- Friendly Servers
- Internal PBX Server
- External PBX Server
- Advanced settings
- Data Sources
- COM ports
- TCP/IP
- Email
 - Pop3
 - Smtip
- SMS
 - SMS
- License

Remote Agents

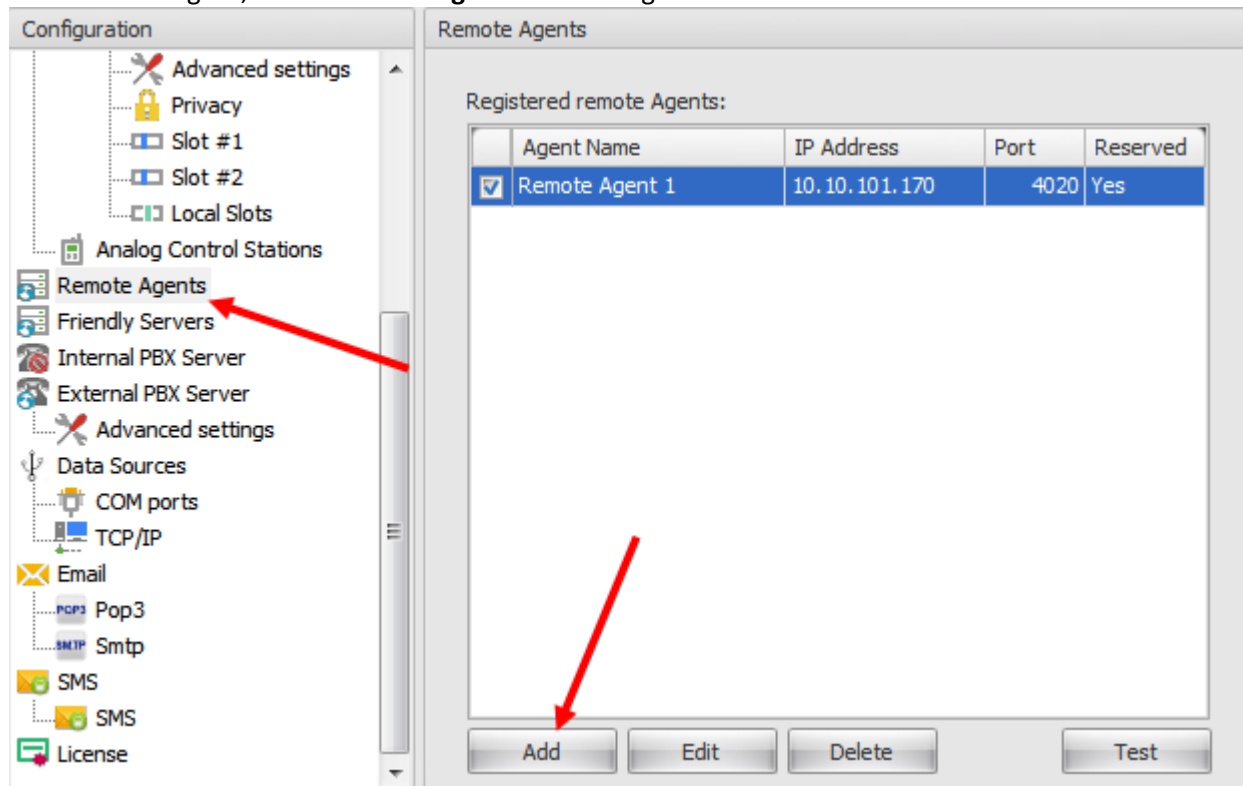
Registered remote Agents:

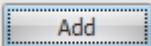
	Agent Name	IP Address	Port	Reserved
<input checked="" type="checkbox"/>	Remote Agent 1	10.10.101.170	4020	Yes

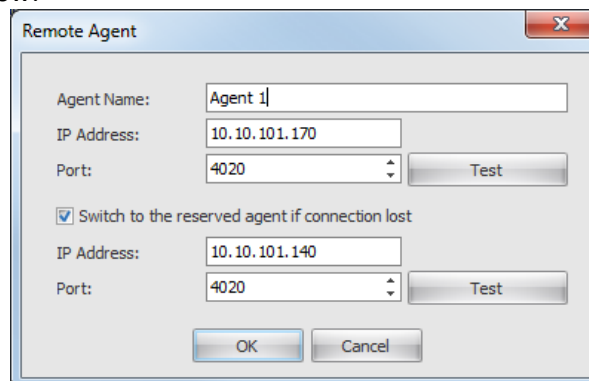
Add Edit Delete Test

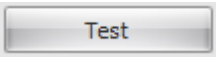
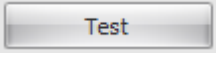
On the **Remote Agent** tab you can add/delete and edit remote agents in the system.

To add a Remote Agent, select **Remote Agent** in the Navigation tree:



Click  button to add an agent in the system.
 Set its parameters in the window:



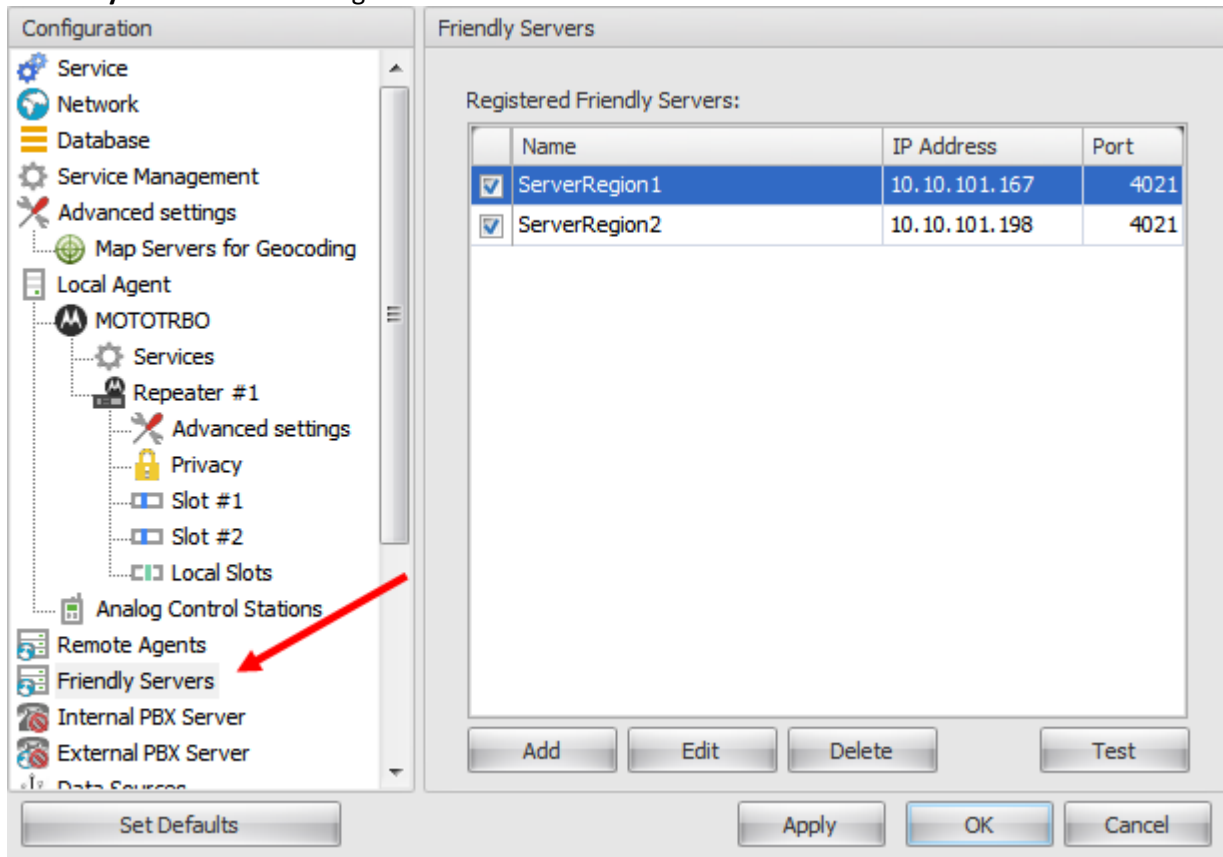
- **Agent Name** – select the Name for new Remote Agent in the system;
- **IP Address** – specify Remote Agent IP Address (each Remote Agent has its own IP Address);
- **Port** – select free port on the local PC to connect to the Remote Agent;
- Click  button to check the connection.
- **Switch to the reserved agent if connection is lost** – check if you have a reserved agent in the system to connect to this one in case of connection lost:
- **IP Address** – specify an IP Address of the reserved Remote Agent;
- **Port** – select free port on the local PC to connect to the reserved Remote Agent.
- Click  button to check the connection to the reserved Remote Agent.

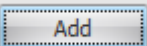
Click «OK» to add a Remote Agent in the system.

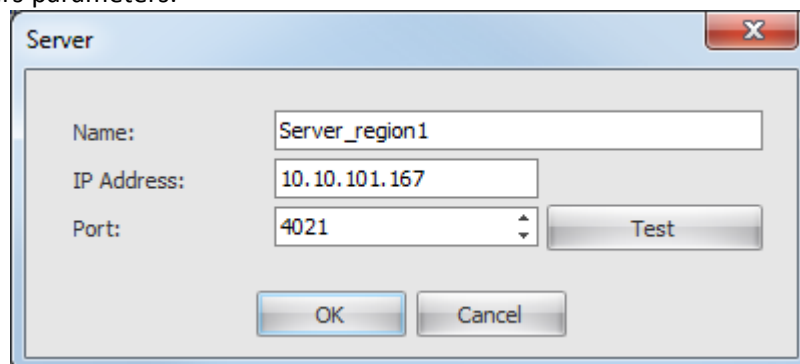
Friendly Servers

Friendly Servers are able to transmit voice over IP between dispatchers from different servers. Specify Friendly Servers to provide VoIP routing.

Go to **Friendly Servers** in the Navigation tree:



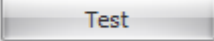
Click  button to add servers.
 Specify Friendly Servers' parameters:

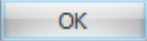
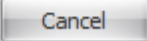


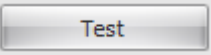
Server

Name:

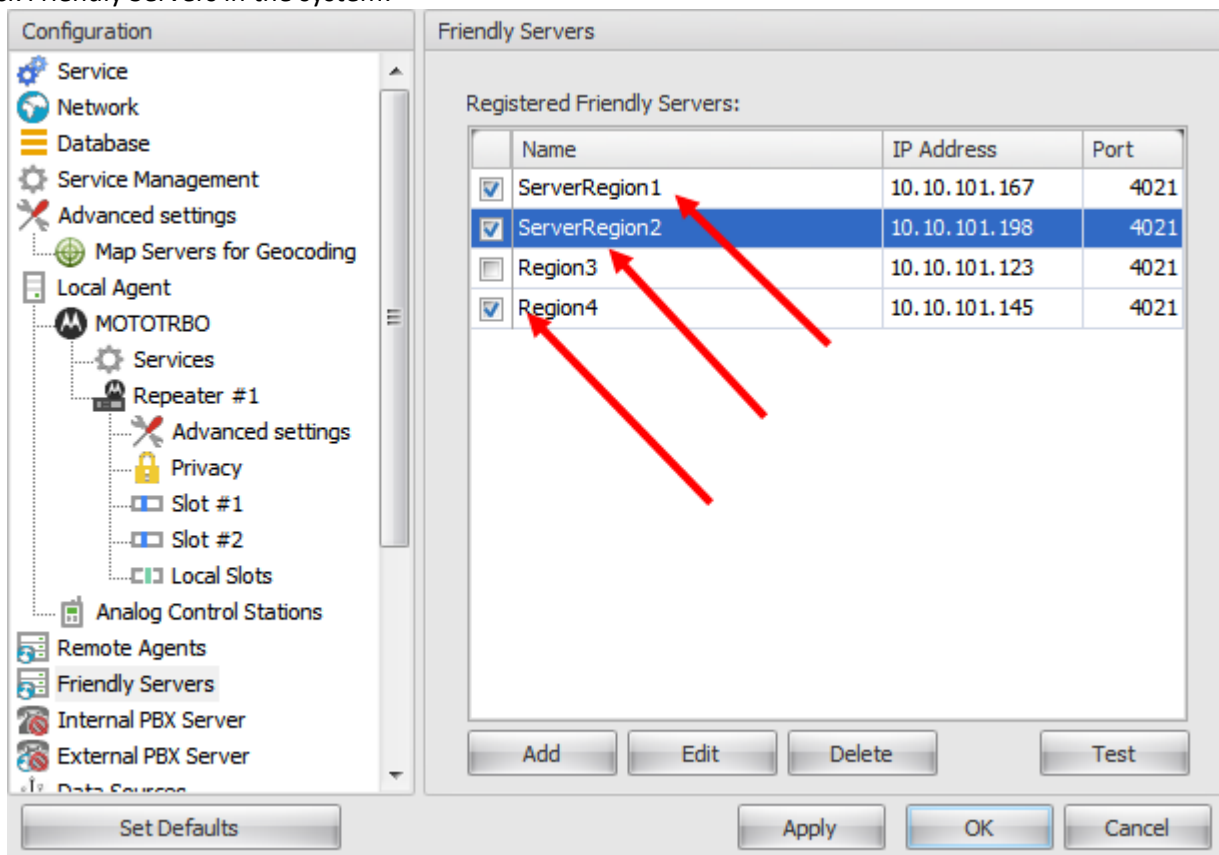
IP Address:

Port: 

- **Name** – specify the Name for the Server in the system;
- **IP Address** – specify an IP Address of the Server;
- **Port** – specify a local free port on the PC to connect to Server.
- Click  button to check the connection to the Server.
- Click «**OK**» button to add the Server

Check Friendly Servers in the system:



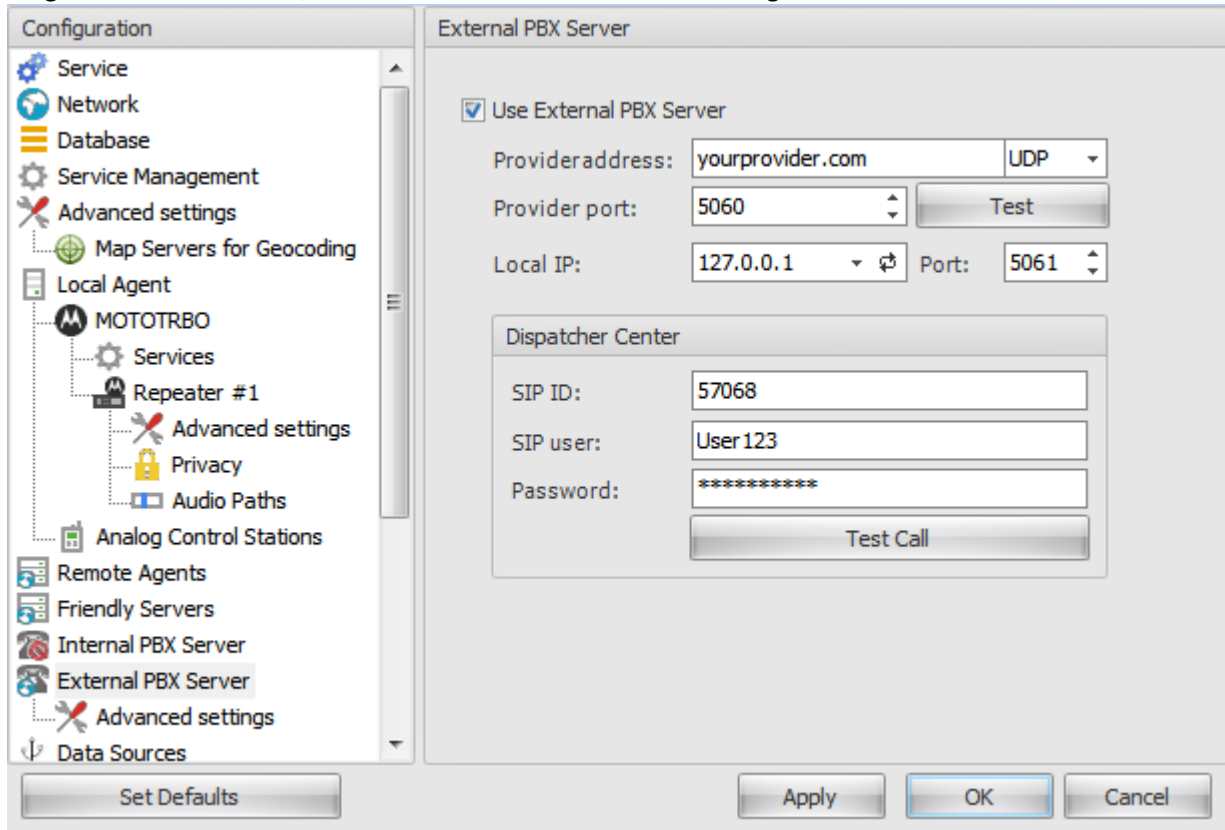
Check the box in the Servers' row to specify it as Friendly Servers.

Click  button to check the connection.

External PBX Server

Enable External PBX Server to use SIP Interconnect feature. The feature allows to make calls from radio to phone and vice versa. Dispatcher can make a call from Dispatch Console to phone and redirect a phone call to a subscriber radio.

To configure SIP Interconnect, select **External PBX Server** in the Navigation tree:



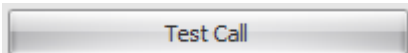
- **Use External PBX Server** – check to enable SIP Interconnect option;
- **Provider address** – type in your provider address you are connected to (for more details contact your provider);
- **Provider port** – 5060 set by default.

Click  button to check the connection.

- **Local IP** – type in your PC IP Address.
- **Port** - specify free port on the local PC to make connections from;

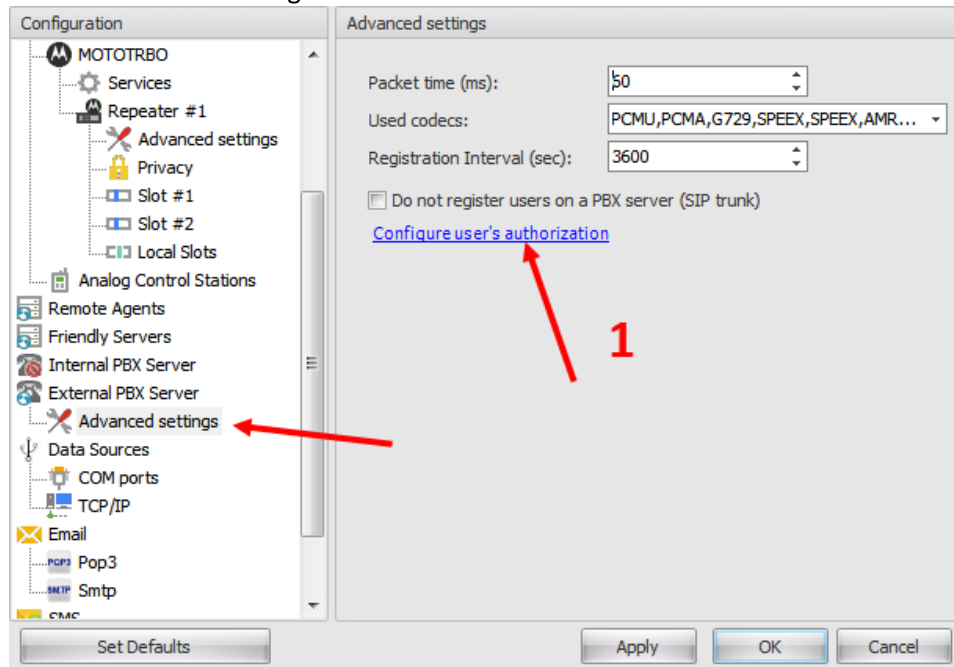
Dispatcher Center – the information is afforded by the provider:

- **SIP ID** – type in SIP ID associated with TRBOnet RadioServer to make and receive calls;
- **SIP Name** – type in SIP Name afforded by provider when login;
- **Password** – the password for integration with Automatic Telephone Station.

Click  to make a test call. Cannot be executed when TRBOnet RadioServer Service is running, please stop the service for configuring and testing purposes.

Advanced Settings

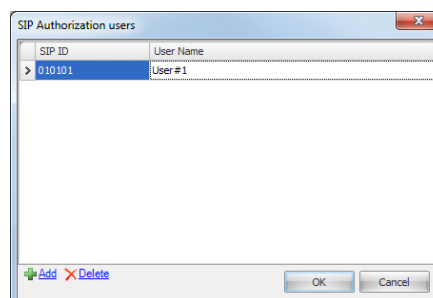
Configure External PBX advanced settings:



- **Packet time** – specify the same value as in the phone system;
- **Used codecs** - specify the same type as in the phone system;

Note: For more details on Phone System configuration see [Appendix F: SIP Setup for Motorola Phone System](#) section.

- **Registration Interval (sec.)** – select time interval (in seconds) to check the radio status (online/offline etc.);
- **Do not register users on a SIP server (SIP Trunk)** – radios will use SIP trunk system to get extensions. See the following [example](#) of SIP Trunk configuration for Asterix Free PBX;
- **Configure user's authorization (1)** – setup user authorization for systems with enhanced authorization parameters. Recommended to use when Radio ID is equal to SIP ID. In case when Voice transmitted via Radio Channel, Radio ID is used. When voice transmitted via GSM channel, SIP ID is used:



Click «**Add**» button to set a new user authorization.

- **SIP ID** – type in your SIP ID afforded by provider to make incoming phone call;
- **User Name** – type in User Name afforded by provider when login;

Click «**OK**» to add new user authorization.

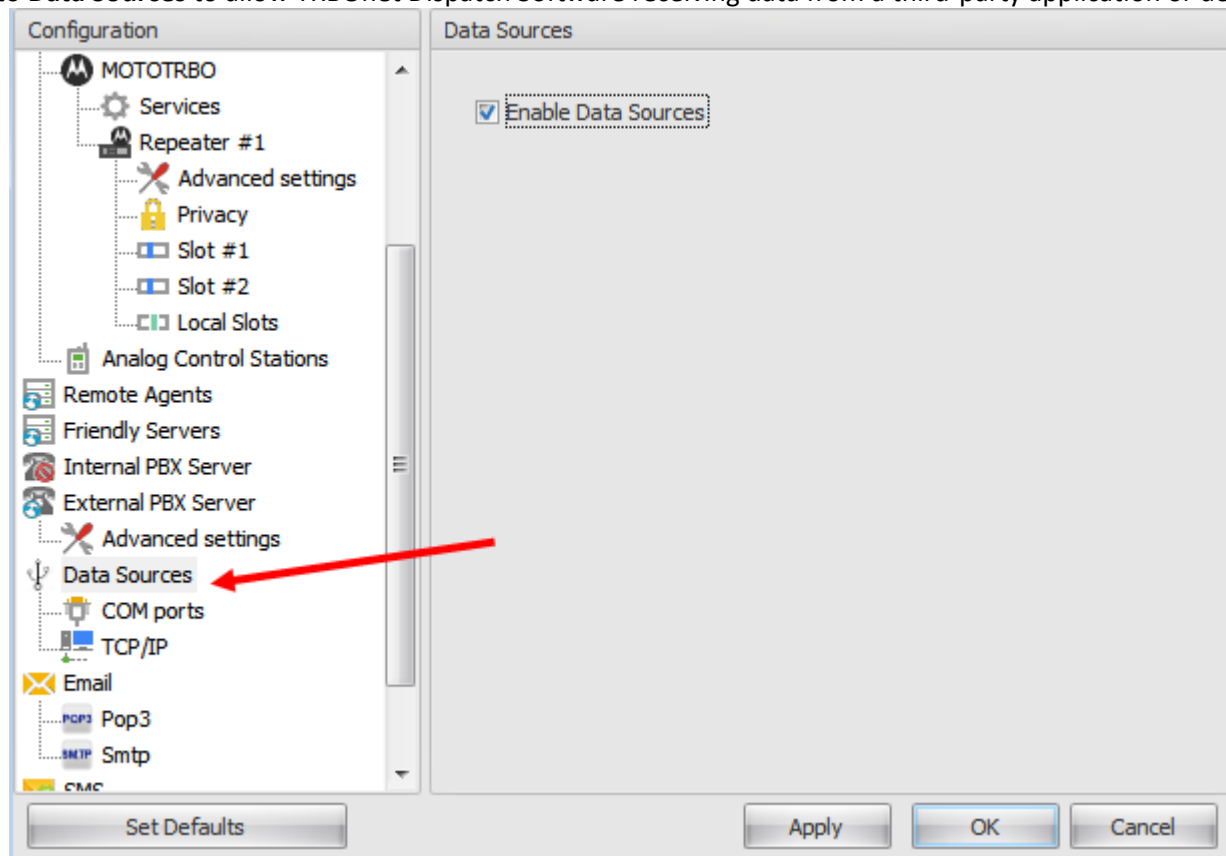
Data Sources

Data Sources feature allows receiving data from third-party devices and Applications.

TRBOnet Dispatch Software works with two data sources types:

- Physical or virtual devices connected via COM port
- PCs running third-party application connected via TCP/IP.

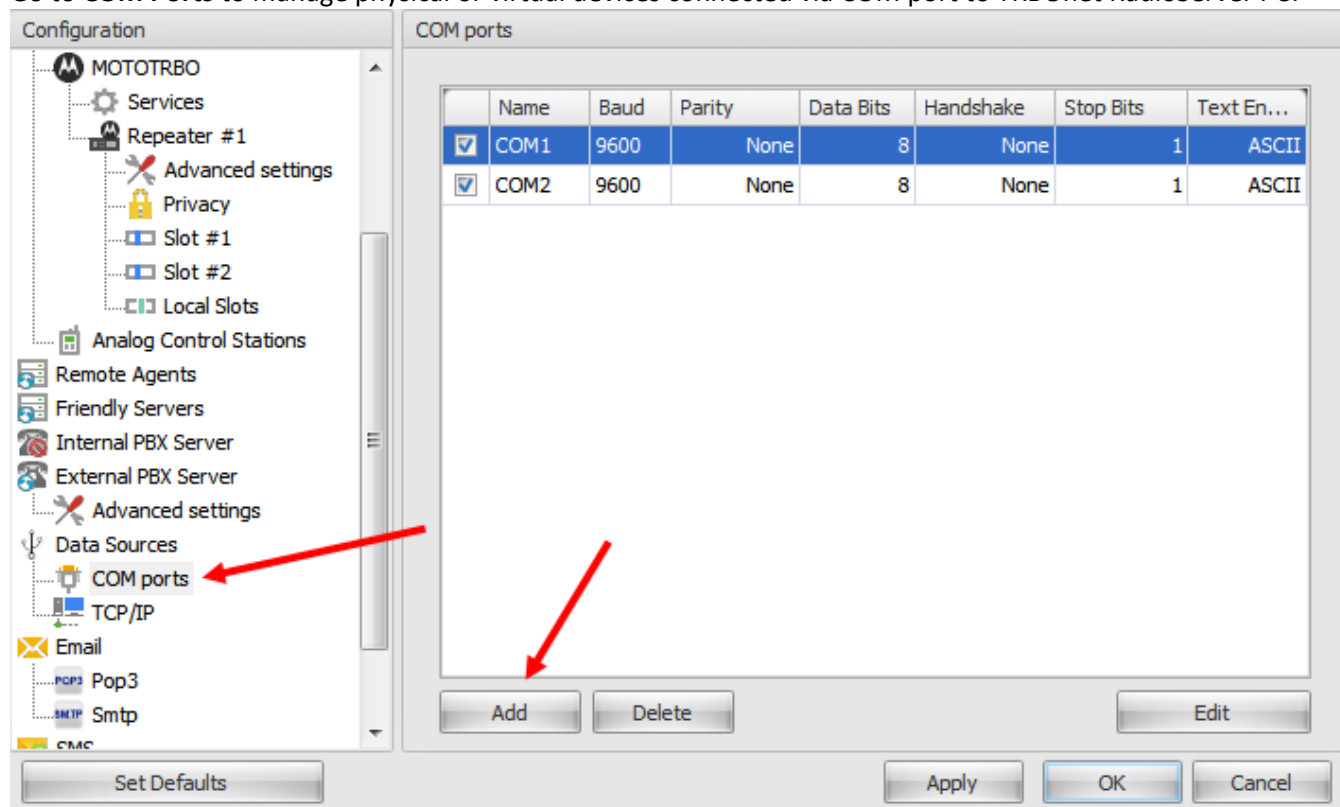
Go to **Data Sources** to allow TRBOnet Dispatch Software receiving data from a third-party application or device:



Check «**Enable Data Sources**» to enable the feature.

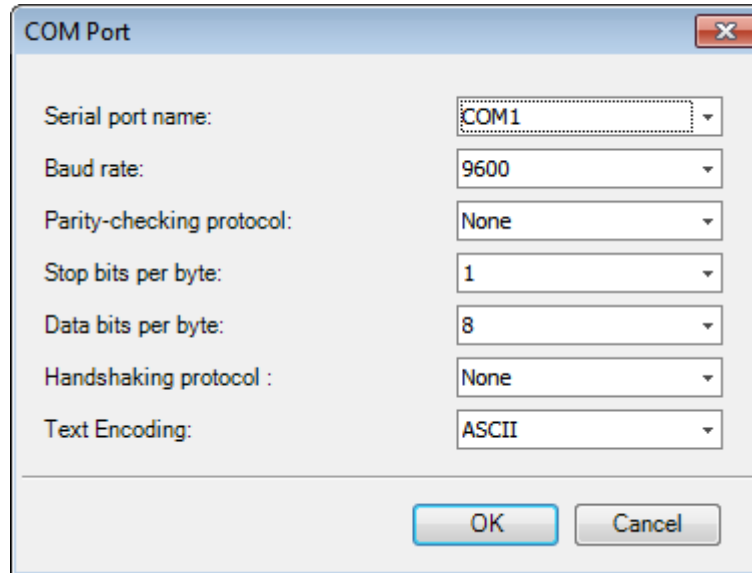
COM Ports

Go to **COM Ports** to manage physical or virtual devices connected via COM port to TRBOnet RadioServer PC:



Click  button to add a new device.

Configure new COM Port device:



The dialog box titled "COM Port" contains the following settings:

- Serial port name: COM1
- Baud rate: 9600
- Parity-checking protocol: None
- Stop bits per byte: 1
- Data bits per byte: 8
- Handshaking protocol: None
- Text Encoding: ASCII

Buttons: OK, Cancel

- **Serial port name** – specify a COM-port on the TRBOnet RadioServer PC where the device is connected to;
- **Baud rate** – set the serial baud rate;
- **Parity-checking protocol** – select one of the enumeration values, that represents the parity-checking protocol;
- **Stop bits per byte** – select the standard number of stopbits per byte;
- **Data bits per byte** – select the standard length of data bits per byte;
- **Handshaking protocol** – select the handshaking protocol for serial port transmission of data;
- **Text Encoding** – select Text Encoding type in the dropdown list.

Note: Text Encoding type selected in the Server Configurator and Text Encoding type on the connected application must be the same to avoid incorrect text displaying and incorrect data parsing.

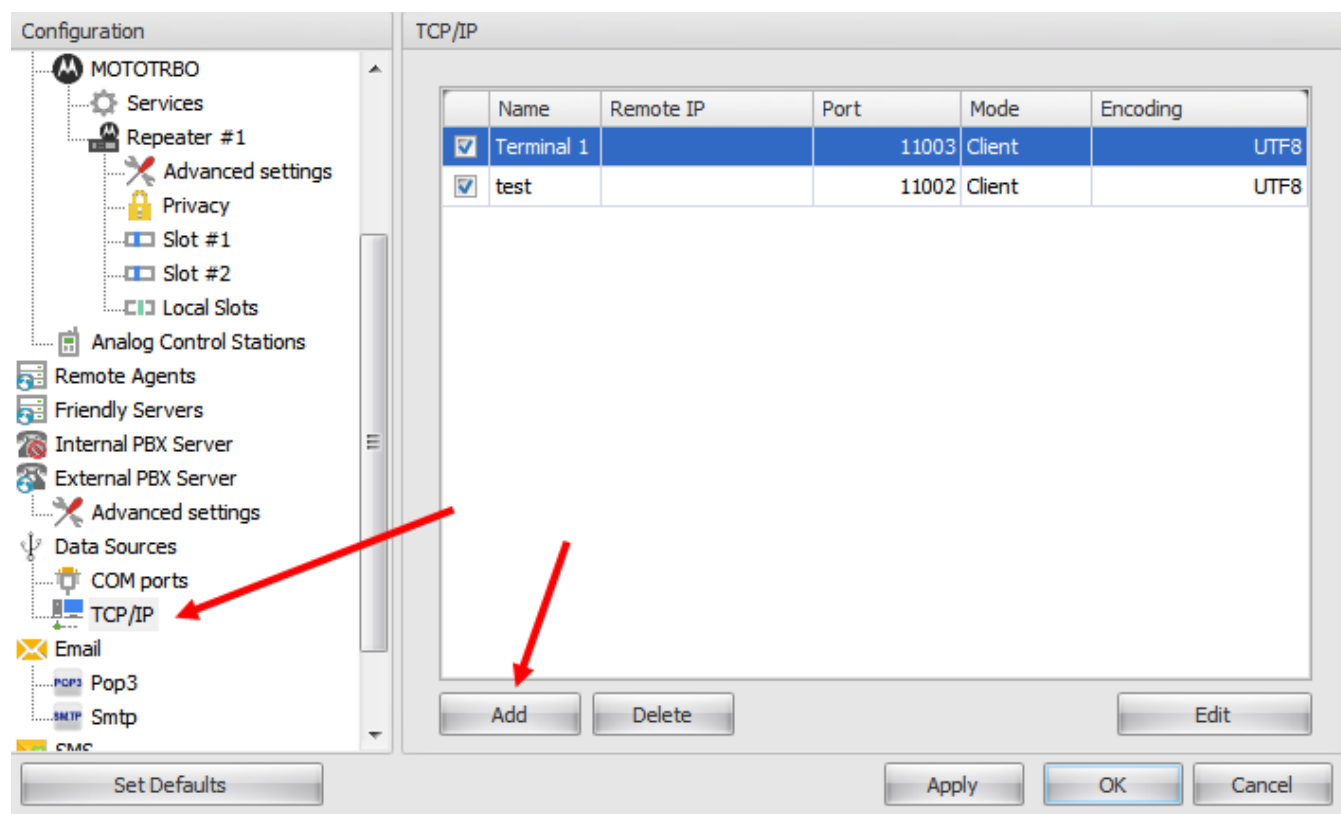
Click «OK» to save settings and close dialog window.


Note: In case of COM Port connection third-party data message should consist one of the following end of line symbols: \r\n or #0D#0A or 0x0D 0x0A.

TCP/IP

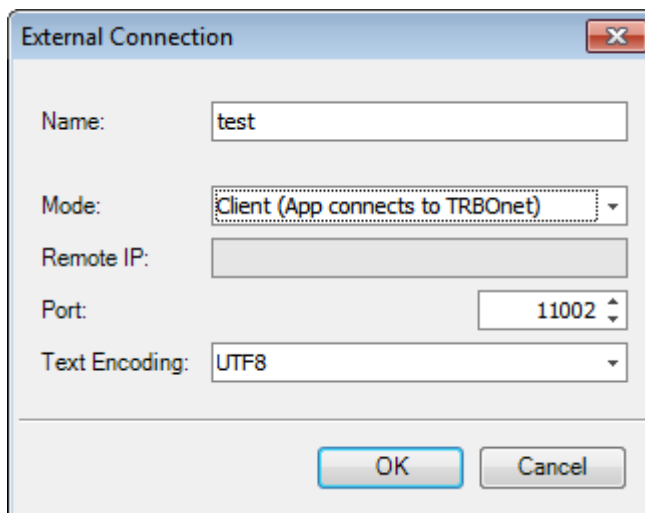
Go **TCP/IP** for managing PCs connected via TCP/IP to TRBOnet RadioServer PC.

Note: When using TCP/IP connection all data will be transferred via UDP protocol only.



Click  button (1) to add a new device connected via TCP/IP.

Configure new connection:



The dialog box titled "External Connection" contains the following fields and controls:

- Name:** A text input field containing the value "test".
- Mode:** A dropdown menu with the selected option "Client (App connects to TRBOnet)".
- Remote IP:** An empty text input field.
- Port:** A spin box with the value "11002".
- Text Encoding:** A dropdown menu with the selected option "UTF8".
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

- **Name** – type in name for new TCP/IP connection;
- **Mode** – select connection mode. The connection mode depends on application type installed on the connected PC:
 - ✓ An application can act as client (**Client** connection mode). In this case, application connects to TRBOnet RadioServer which sends the data to application.
 - ✓ An application can act as a server (**Server** connection mode). In this case, TRBOnet RadioServer accepts connection from application and receives the data.
- **Remote IP** (available for **Server** connection mode) – type in an IP of the application server;
- **Port** – in case of **Client** connection mode select free port of TRBOnet Server PC. In case of **Server** connection mode select port of PC where the third-party application installed.
- **Text Encoding** – select Text Encoding type in the dropdown list.

Note: Text Encoding type selected in the Server Configurator and Text Encoding type on the connected application must be the same to avoid incorrect text displaying and incorrect data parsing.

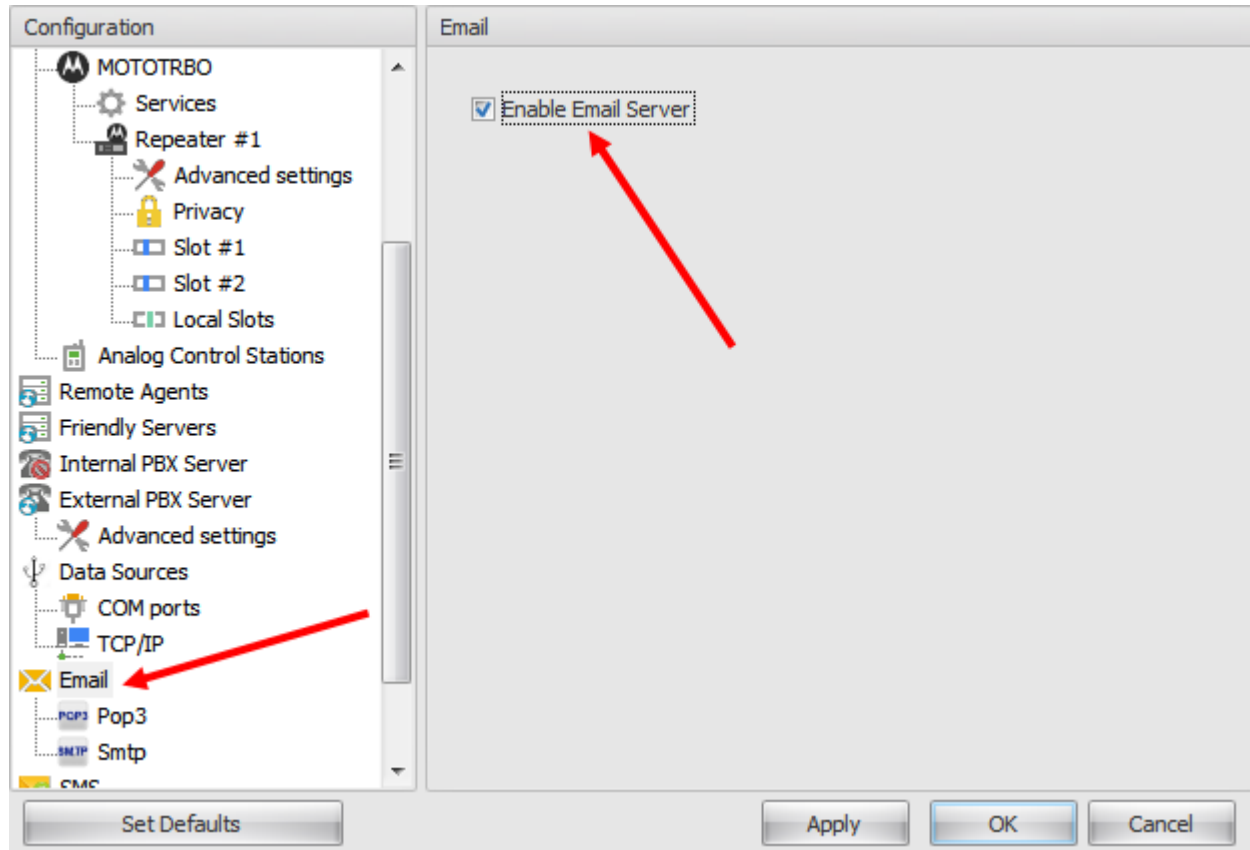
Email Settings

TRBOnet Dispatch Software allows emails processing:

1. Receive Emails from any mail servers and forward to a particular radio or talk group (POP3 Server);
2. Forward all Emails from radios to particular email address (SMTP Server).

Note: Microsoft Exchange Server can be used as SMTP and POP3 servers.

Go to **Email** to enable Email Server:

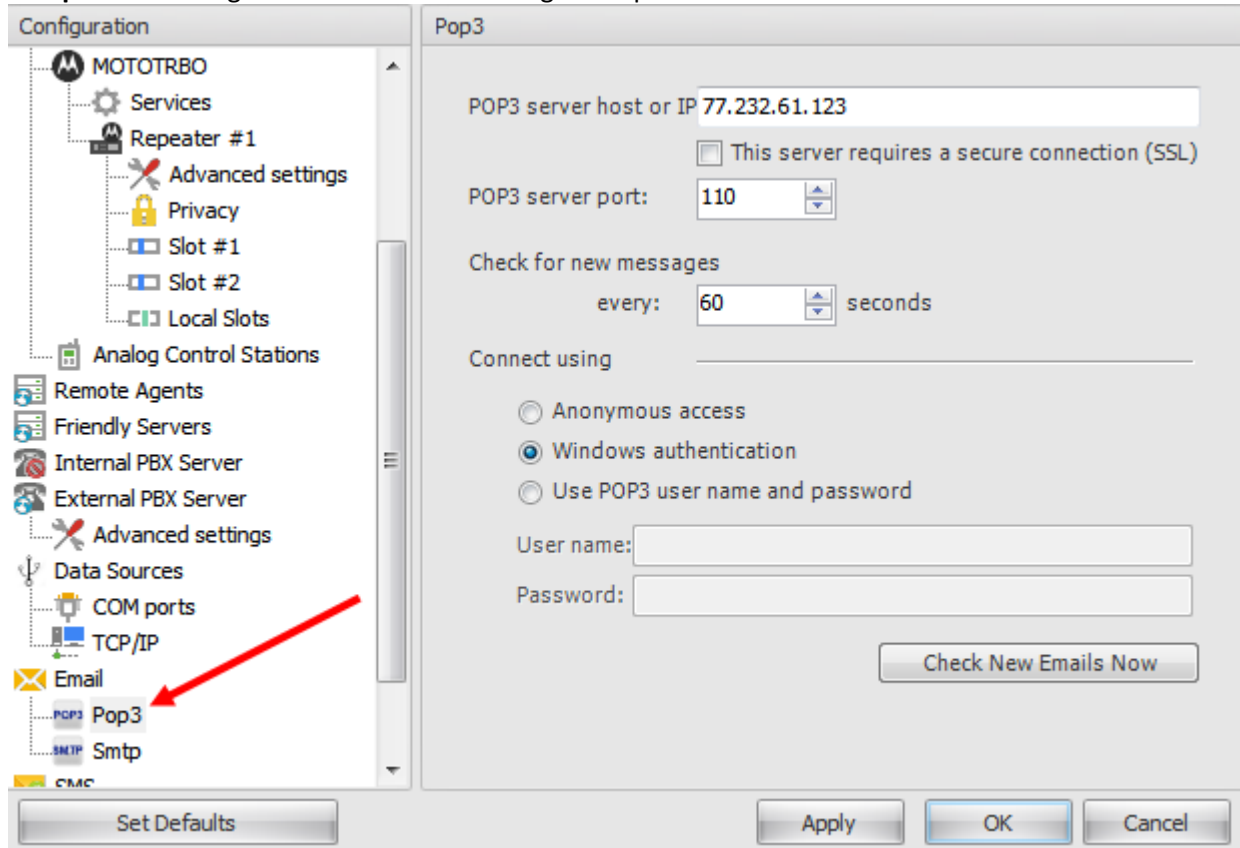


Check «**Enable Email Server**» to allow send and receive emails.

POP3 Server

POP3 server is intended to synchronize **Incoming** emails folder you have on any mail server with your local PC. In case of using POP3 server all Incoming emails can be downloaded from a mail server (GMail, Yahoo, etc.) on the local PC to forward as text messages to radios or talk groups.

Go to **Pop3** in the Navigation Tree to set Incoming email parameters:



Configure incoming email parameters:

- **POP3 server hostname or IP** – Specify POP3 server host (e.g. pop.gmail.com for gmail) or IP (e.g. 77.232.61.123) to receive emails;
- **This server requires a secure connection** – select to enable secure connection (use special port to connect a mail server);
- **POP3 server port** – the default port is 110 for non-secured connections. Port value depends on mail system being used, e.g., for example GMail uses port 995 as we ass secured connection.
- **Check for new messages every X seconds** – set the time interval to check for new emails;

Connect using

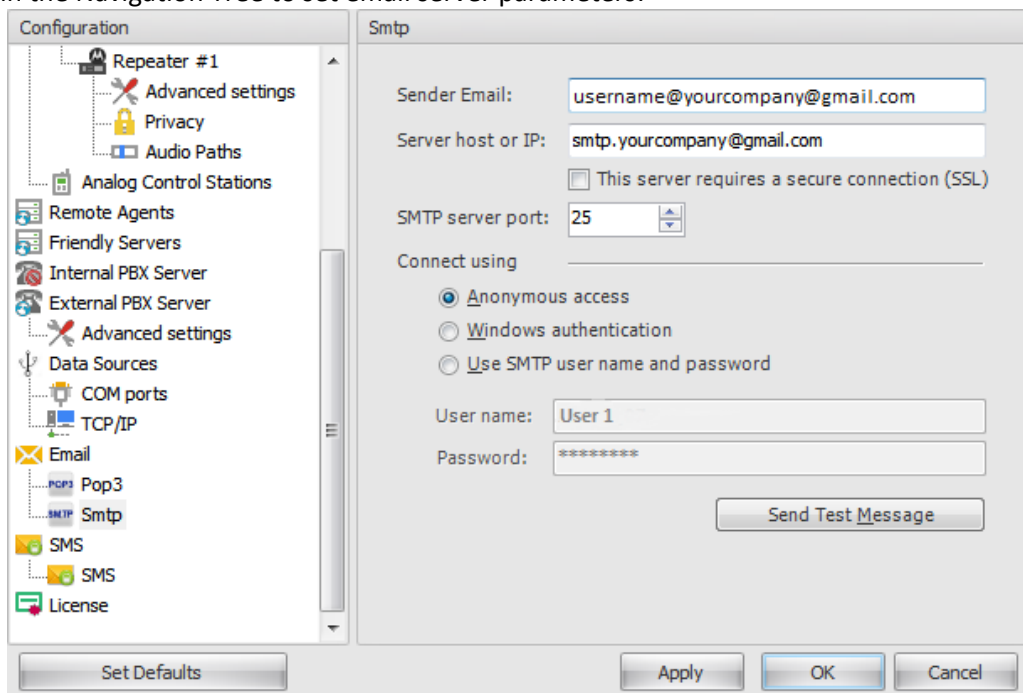
- **Anonymous access** – select to use an anonymous access to selected POP3 server;
- **Windows authentication** – select to connect TRBOnet Service Windows Account, if it running under specific account;
- **Use POP3 user name and password** – specify POP3 server credentials for the mailbox:
 - ✓ **User name** – type in the POP3 server user name;
 - ✓ **Password** – type in the POP3 server password;
- **Check New Emails Now** – click to synchronize Incoming mails folder and check new emails.

SMTP Server

SMTP Server is intended to send emails from users to mail servers and between mail servers for further delivery to the recipient. To receive emails you need to use POP3 server.

For example, Administrator enables email notifications from TRBOnet Dispatch Software to particular email users in case of Alarms on selected radios. At this case, radio sends alarm to TRBOnet RadioServer which converts alarm to text and forwards it as email to particular email addresses (e.g. admin@yourcompany.com).

Go to **SMTP** in the Navigation Tree to set email server parameters:



Configure outgoing email parameters:

- **Sender** – input email address to send test email to. Equal to field «From» when a user receives email;
- **SMTP server host or IP** – Simple Mail Transfer Protocol is the protocol for email transmission via IP networks. server host (e.g. smtp.gmail.com for gmail) or IP (e.g. 77.232.61.123) to send emails;
- **This server requires a secure connection (SSL)** – select to use a secure connection to selected SMTP server (use special port to connect a mail server);
- **SMTP server port** the default port is 25. Can be used in case server does not require secured connection. Port value depends on mail system you are using, e.g., for GMail SMTP server port is 465 with SSL;

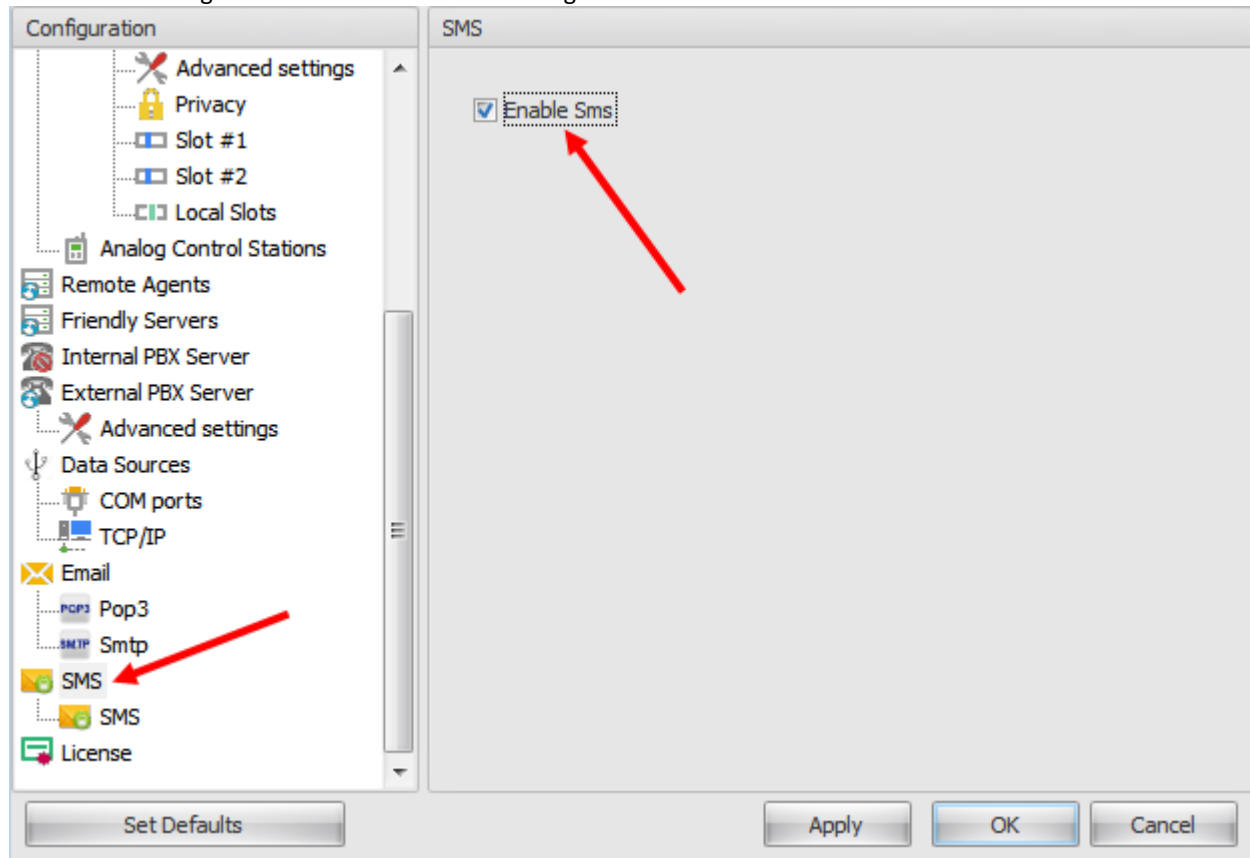
Connect using

- **Anonymous access** – select to use an anonymous access to connect SMTP server;
- **Windows authentication** – select to connect with Windows authentication to connect SMTP server;
- **Use SMTP user name and password** – select if you are going to connect to SMTP server using an existing user name and password;
 - ✓ **User name** – type in the SMTP user name;
 - ✓ **Password** – type in the SMTP password;
- **«Send Test Message»** – click to send a test message from email address specified in «Sender» field to a selected email.

SMS Settings

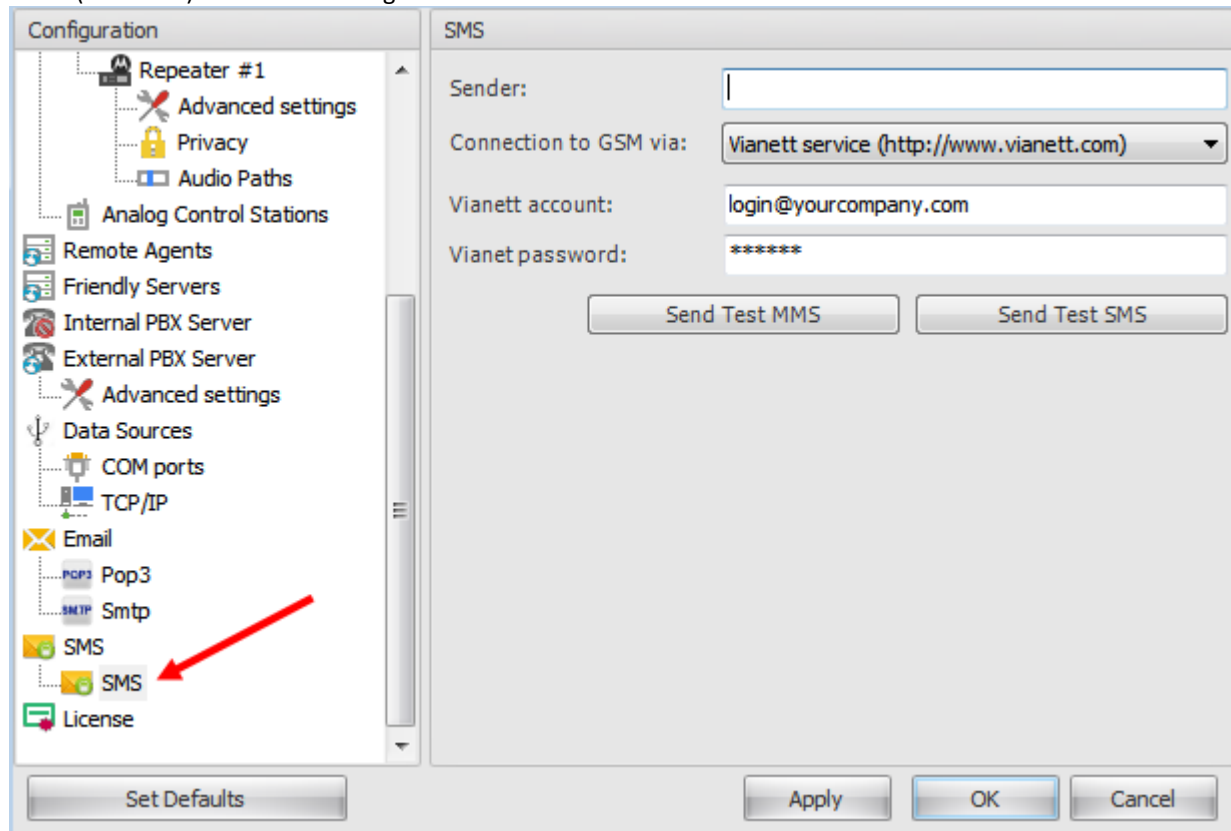
TRBOnet Dispatch Software allows SMS notifications to a cell phones in case of Alarm and other events (e.g. DTMF commands from radios, Telemetry, Radio State etc.) configured by Administrator.

Go to **SMS** in the Navigation Tree to enable SMS sending feature:



Check «**Enable SMS**» to allow send and receive SMS text messages.

Go to **SMS** (sub-node) to set SMS settings:



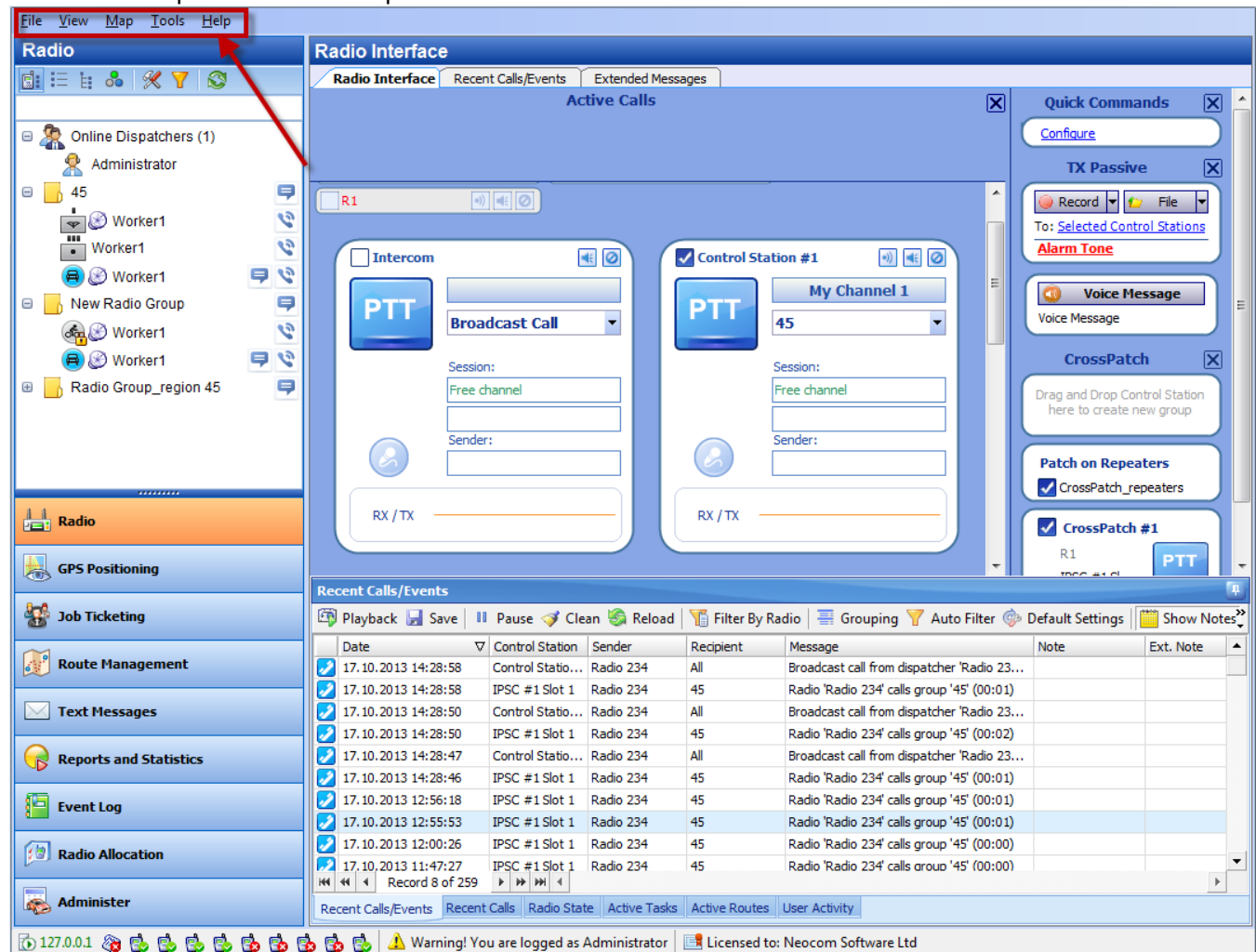
- **Sender** – deprecated. Do not use this field;
- **Connection to GSM via** – select the type of connection:
 - ✓ Nokia mobile phone connected to TRBOnet Server PC. Select if you are going to send sms notifications via Nokia cell phone connected TRBOnet Server PC;
 - ✓ **Vianett service** – select if you have an account on Vianett service. For more details on Vianett service visit official website: <http://www.vianett.com/>;
 - **Vianett account** (for Vianett connection only) – type in your account;
 - **Vianett password** (for Vianett connection only) – type in the password.
- **Send Test MMS (for Vianett connection only)** – click to send a test MMS from Vianett account to recipient phone number.
- **Send Test SMS (for Vianett connection only)** – click to send a test SMS from Vianett account to recipient phone number.

Administrator Activity in the Dispatch Console

Particular features of TRBOnet software can be configured by Administrator in dispatch console after initial installation and configuration. Default Administrator credentials are “admin” for the login and “admin” for the password.

Dispatch Console Menu

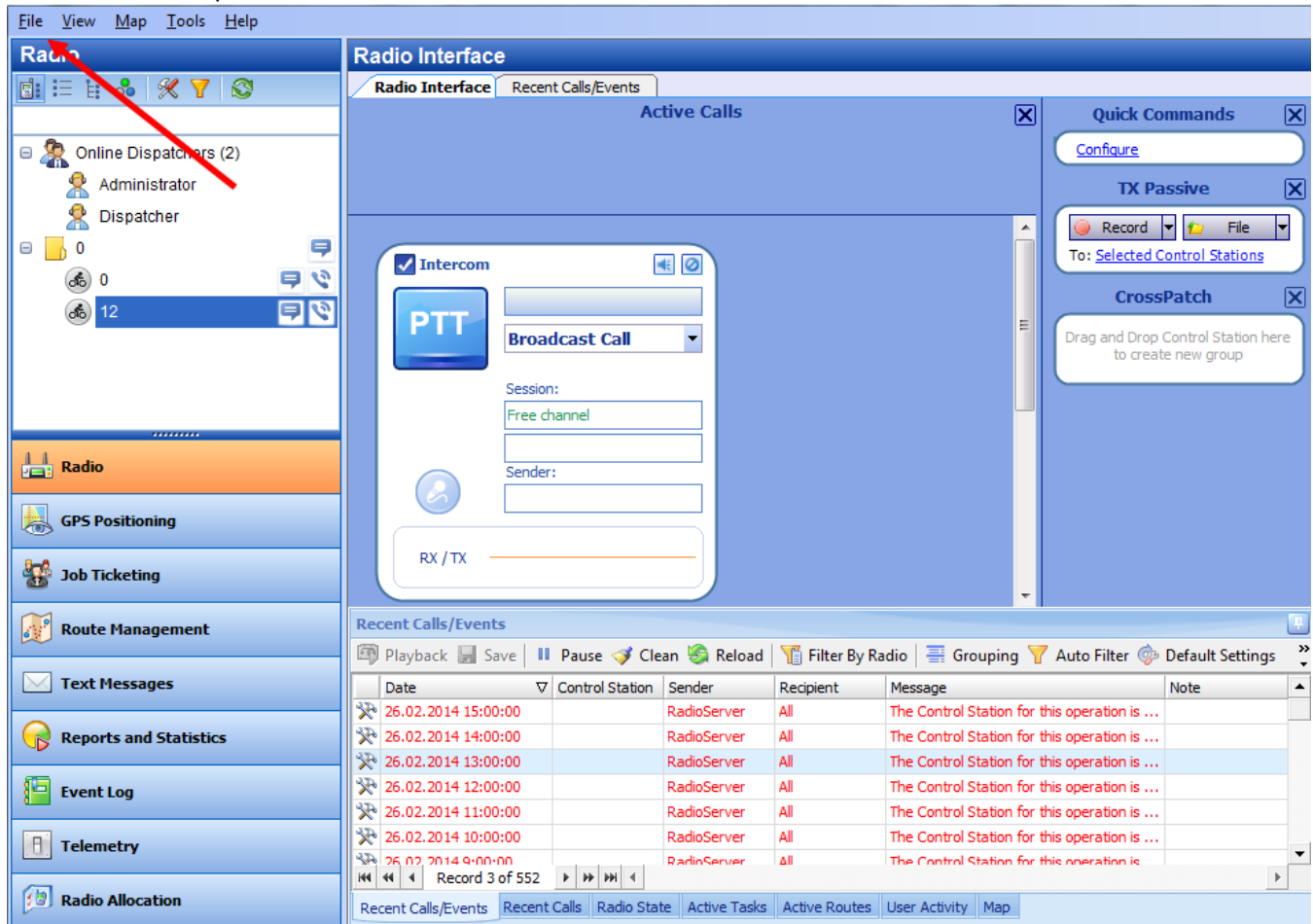
Dispatch Console menu allows to manage the main Dispatch Console options it can be found in the upper part of TRBOnet Dispatch Software Dispatch Console:



Date	Control Station	Sender	Recipient	Message	Note	Ext. Note
17.10.2013 14:28:58	Control Statio...	Radio 234	All	Broadcast call from dispatcher 'Radio 23...		
17.10.2013 14:28:58	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 14:28:50	Control Statio...	Radio 234	All	Broadcast call from dispatcher 'Radio 23...		
17.10.2013 14:28:50	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:02)		
17.10.2013 14:28:47	Control Statio...	Radio 234	All	Broadcast call from dispatcher 'Radio 23...		
17.10.2013 14:28:46	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:56:18	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:55:53	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:00:26	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:00)		
17.10.2013 11:47:27	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:00)		

File

Select **File Menu** to connect to another TRBOnet RadioServer or to use other credentials. Also, select to exit from TRBOnet Dispatch Console:



Radio Interface

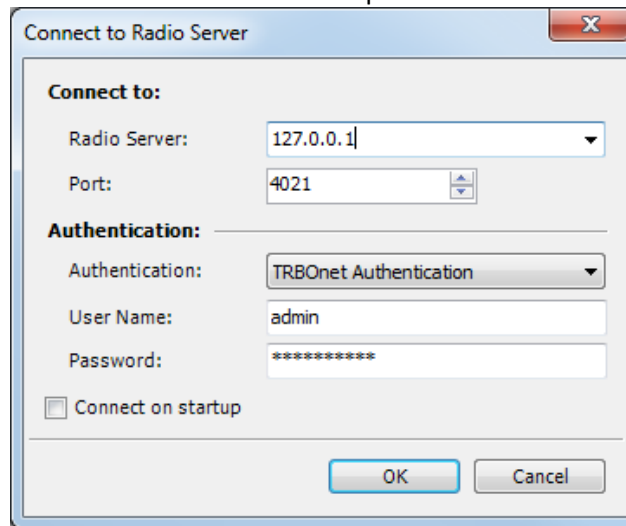
Active Calls

Recent Calls/Events

Date	Control Station	Sender	Recipient	Message	Note
26.02.2014 15:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 14:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 13:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 12:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 11:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 10:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 09:00:00		RadioServer	All	The Control Station for this operation is ...	

1. Connect to TRBOnet RadioServer.

Select **File, Connect to RadioServer** and set the connection parameters:



The dialog box titled "Connect to Radio Server" contains the following fields and options:

- Connect to:**
 - Radio Server: A dropdown menu showing "127.0.0.1".
 - Port: A text box containing "4021".
- Authentication:**
 - Authentication: A dropdown menu showing "TRBOnet Authentication".
 - User Name: A text box containing "admin".
 - Password: A text box containing "*****".
- ☐ Connect on startup
- Buttons: OK and Cancel.

Connect to:

- **RadioServer** – select the TRBOnet RadioServer in the dropdown list or specify its IP Address;
- **Port** - specify a local port of TRBOnet RadioServer to accept connections from a repeater. Use unique ports for each repeater connection if there are several repeaters connected;

Authentication:

- **Authentication** – select Authentication type in the dropdown list.
- Select **TRBOnet Authentication** to log on as User registered in TRBOnet Dispatch Software Users list.
- **User Name** – specify User Name registered in TRBOnet Dispatch Software Users list;
- **Password** – type in the individual password.

Select **Windows Authentication** to log on using the PC name. The system automatically shows the PC name as User Name.

For more details on Users with Windows Authentication, see [Dispatchers](#) section.

Note: The password not required when Windows Authentication used.

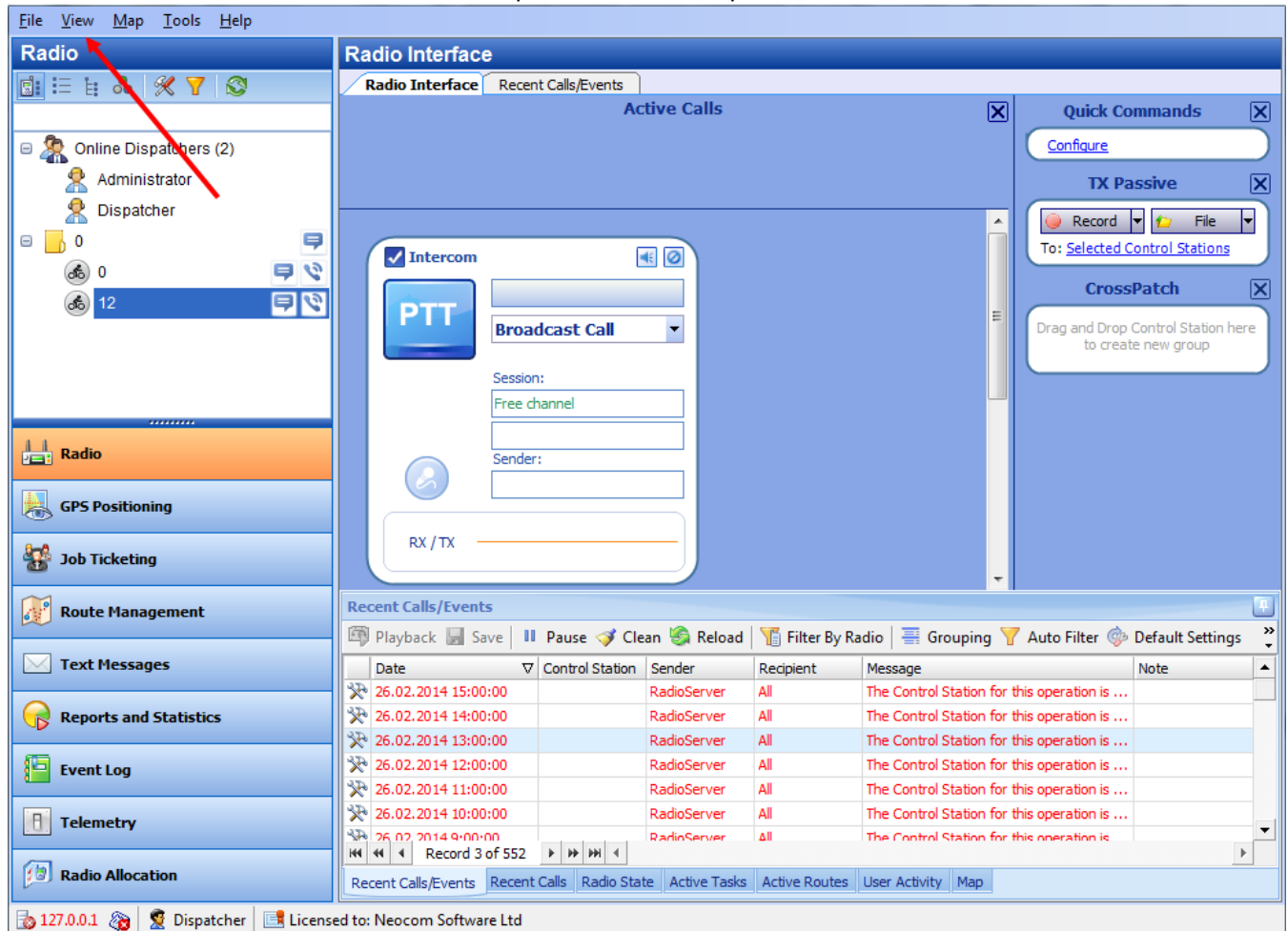
Connect on startup – select to launch Dispatch Console without typing User Name and Password.

2. Exit

Select **File, Exit** to exit the Dispatch Console

View

Select **View Menu** to customize TRBOnet Dispatch Software Dispatch Console:



Radio Interface

Active Calls

Intercom

PTT

Broadcast Call

Session: Free channel

Sender:

RX / TX

Recent Calls/Events

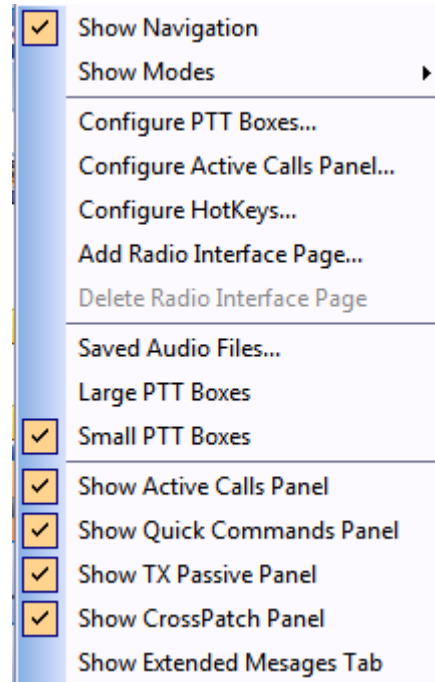
Date	Control Station	Sender	Recipient	Message	Note
26.02.2014 15:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 14:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 13:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 12:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 11:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 10:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 9:00:00		RadioServer	All	The Control Station for this operation is ...	

Record 3 of 552

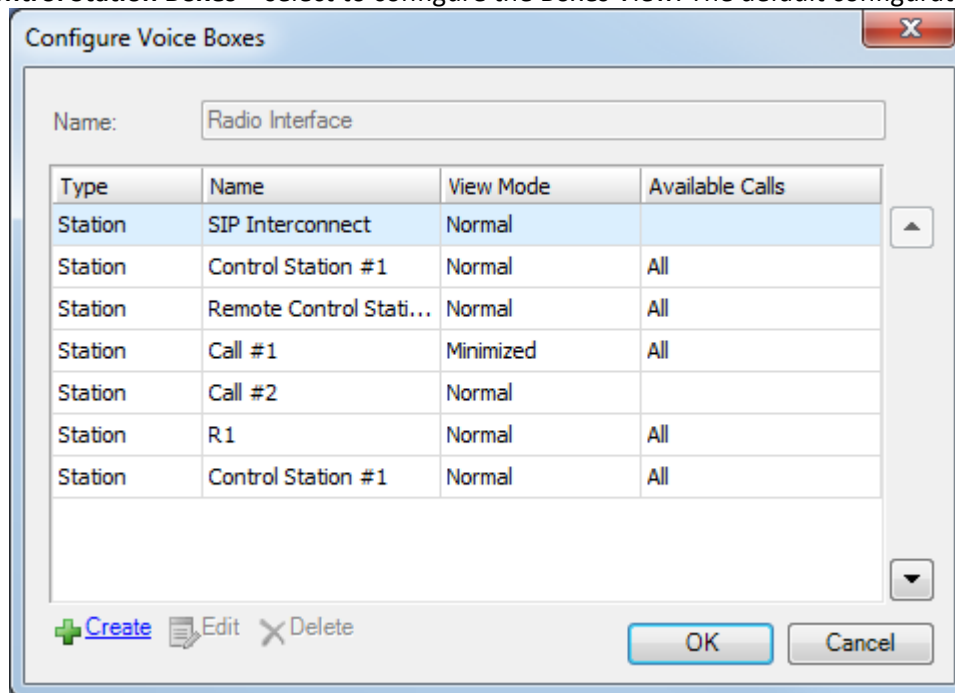
Recent Calls/Events | Recent Calls | Radio State | Active Tasks | Active Routes | User Activity | Map

127.0.0.1 | Dispatcher | Licensed to: Neocom Software Ltd

Click «**View**» to open the Context Menu:



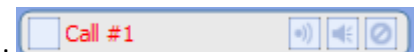
1. **Show Navigation** – select to display Navigation Tree.
2. **Show modes** – select modes in the list to display in the Dispatch Console.
3. **Configure Control Station Boxes** – select to configure the Boxes View. The default configuration displayed:



- **Type** – the Box type (e.g. Station) is displayed;
- **Name** – specify the Name for selected box to display in the Dispatch Console;
- **View Mode** – select the mode in the dropdown list:
 - **Invisible** – the box will not be displayed in the Dispatch Console;
 - **Normal** – the box will be displayed in Normal mode:



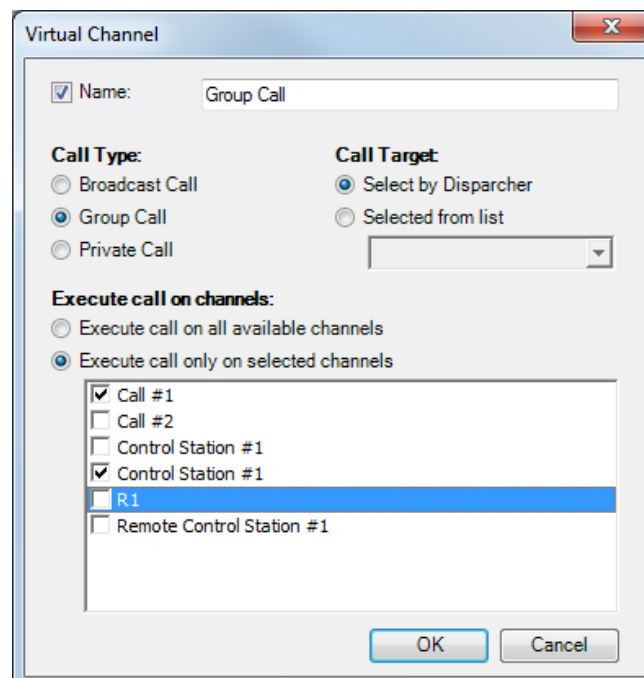
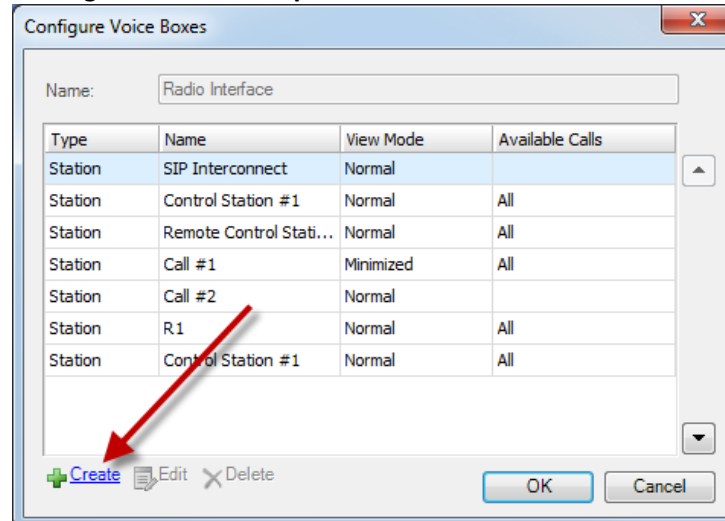
- **Minimized** – the box will be displayed in Minimized mode:



Note: put the mouse cursor on the Minimized box to see it in the Normal Mode.

- **Available Calls** – select available Call types for the box:
 - Select **All** to make all Call Types available for selected box;
 - Select **Broadcast** to make Broadcast Call available for selected box.

To create individual boxes configuration for **Group Calls** and **Broadcast Calls** click «**Create**» button:



- **Name** – check the **Name** box to specify the configuration name and type in the configuration name.
- **Call Type** – select Call Type for new configuration.
- **Call Target** – check «**Select by Dispatcher**» to allow the Dispatcher select the group or **Selected from the list** (to create the configuration for one selected group)

Note: Not available for Broadcast Call Mode.

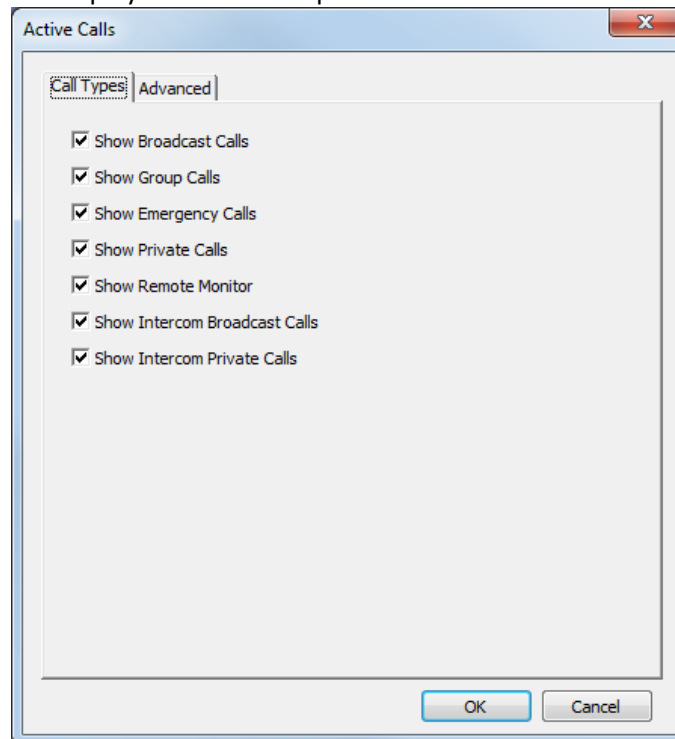
- **Execute call on channels** – select all available channels or select channels in the list below to execute calls from these channels.

Note: Not available for Private Call Mode.

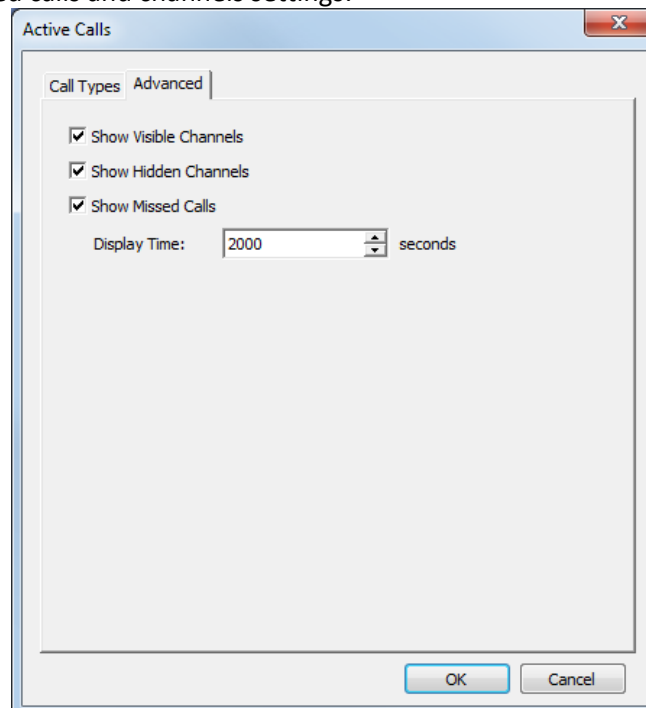
Click «**OK**» to create the configuration.

4. Configure Active Calls panel – select to configure call types and advanced settings for Active Calls panel:

Call Types – select call types to display in Active Calls panel:

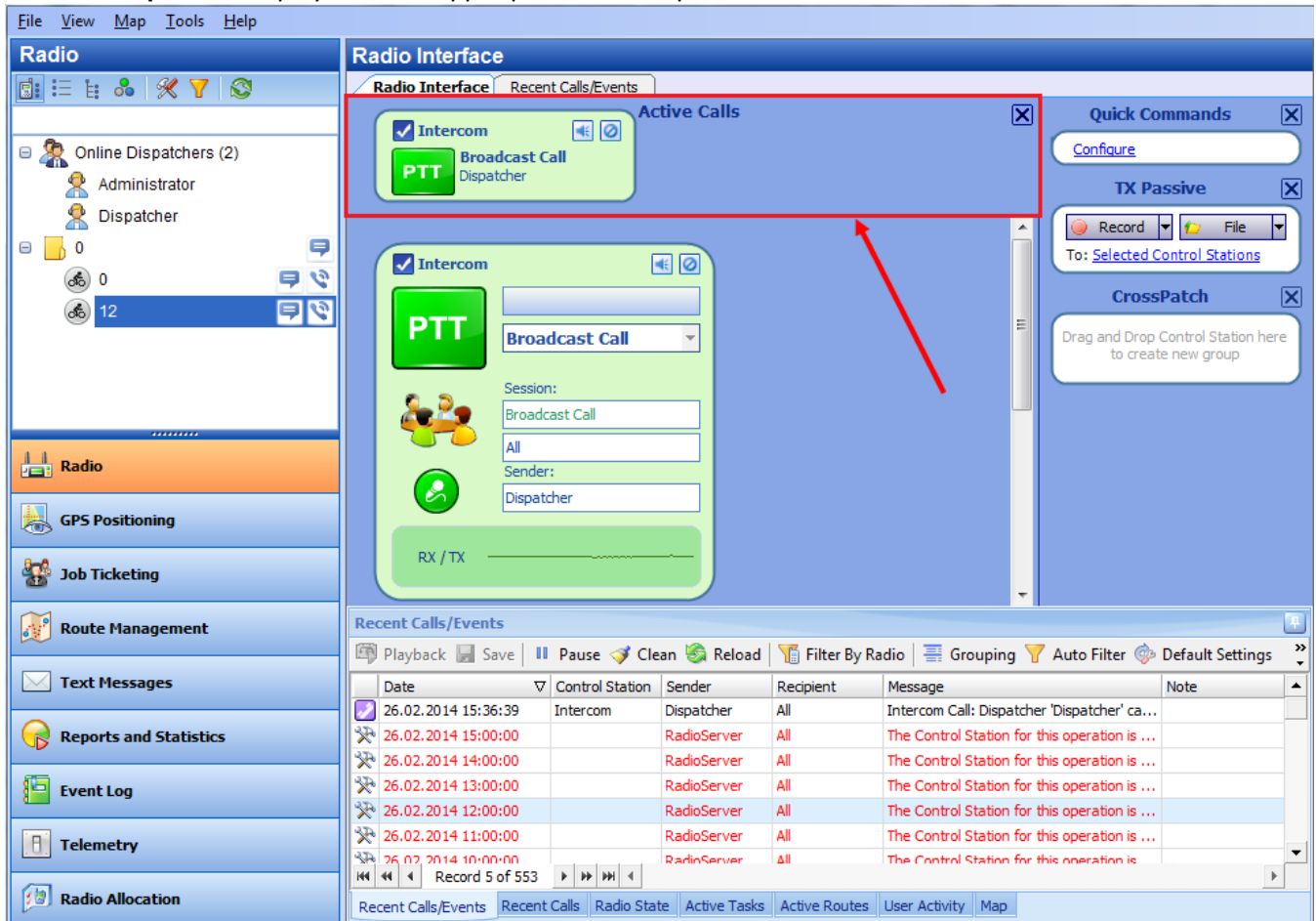


Advanced – specify Advanced calls and channels settings:



Specify elements to display and display time.

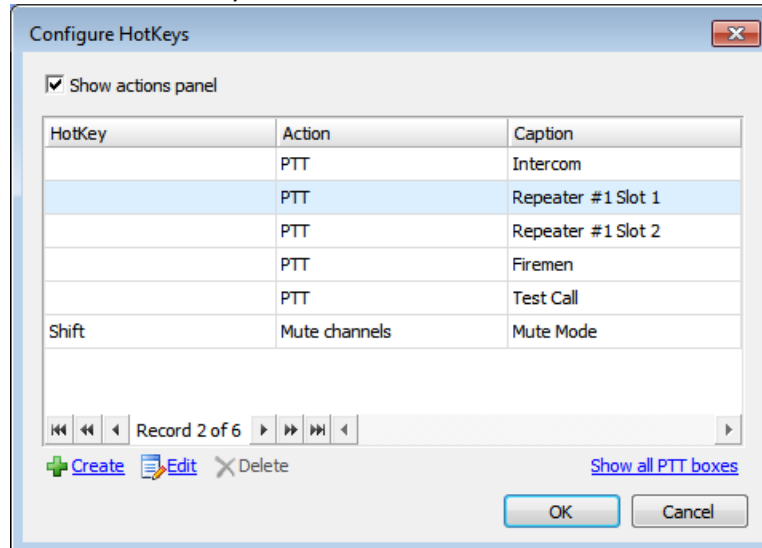
Active Calls panel is displayed in the upper part of the Dispatch Console:



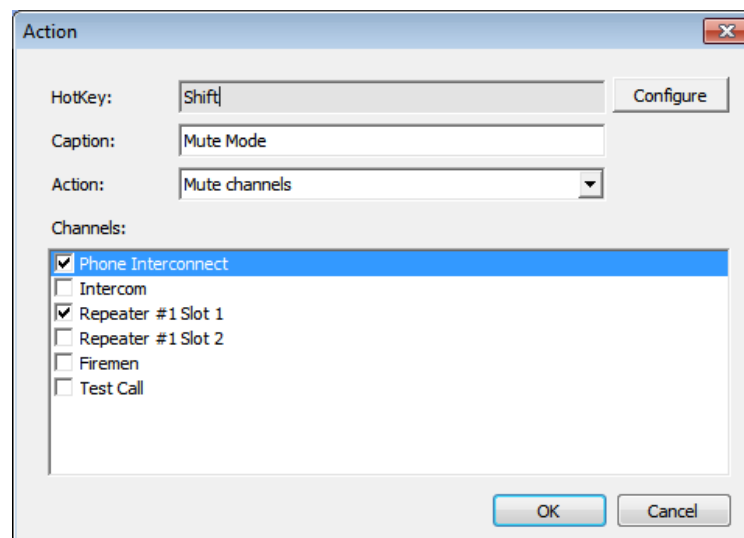
The screenshot shows the Dispatch Console interface. The **Radio** panel on the left lists online dispatchers (Administrator, Dispatcher) and various system functions like GPS Positioning, Job Ticketing, Route Management, Text Messages, Reports and Statistics, Event Log, Telemetry, and Radio Allocation. The main **Radio Interface** panel is divided into **Active Calls** and **Recent Calls/Events**. The **Active Calls** section is highlighted with a red box, and a red arrow points to it. It contains a **PTT** (Push-to-Talk) button and a **Broadcast Call** dropdown menu. The **Recent Calls/Events** section at the bottom displays a table of call history.

Date	Control Station	Sender	Recipient	Message	Note
26.02.2014 15:36:39	Intercom	Dispatcher	All	Intercom Call: Dispatcher 'Dispatcher' ca...	
26.02.2014 15:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 14:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 13:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 12:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 11:00:00		RadioServer	All	The Control Station for this operation is ...	
26.02.2014 10:00:00		RadioServer	All	The Control Station for this operation is ...	

5. Configure hotkeys – select to add hotkeys for actions with selected channels:



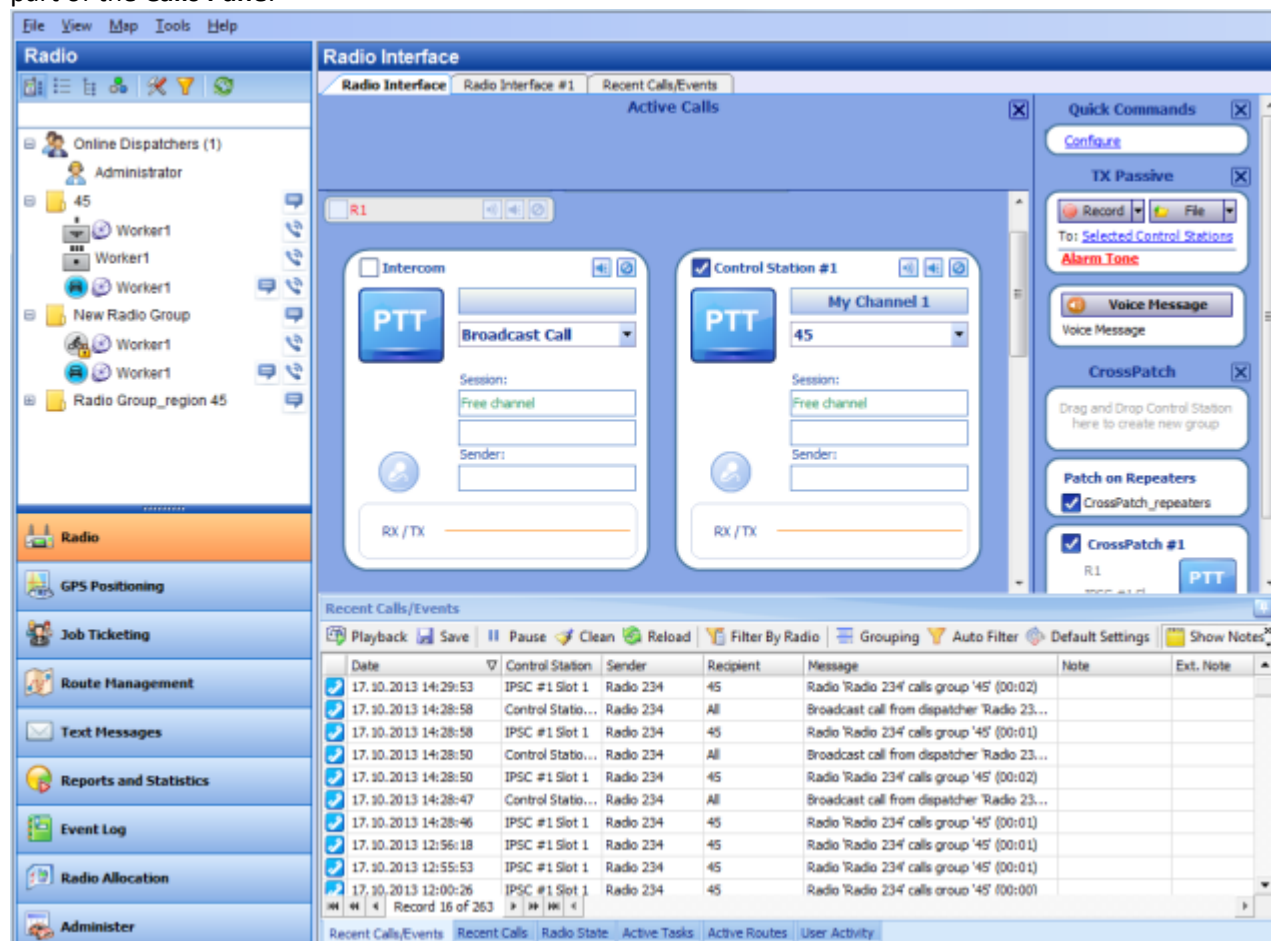
1. If you are going to configure PTT actions for PTT boxes click «**Show all PTT Boxes**» button and assign the hotkey or hotkeys combination. Double-click **HotKey** column and select hotkey(s) for the action.
2. If you are going to set specific actions for PTT boxes (e.g., Mute channels or set default PTT channels), click «**Create**» button:



- **Hotkey** – click «**Configure**» button to set a key you want to assign for the selected action;
- **Caption** – type in a caption to display in the Dispatch Console;
- **Action** – select action in the dropdown list:
 - ✓ **Default PTT channel** –selected PTT box functions as a default PTT channel;
 - ✓ **Mute channels** – mutes selected PTT boxes;
 - ✓ **Unmute channels** – unmutes selected PTT boxes;
 - ✓ **Voice from channels** – mutes voice from all PTT boxes except selected one(s).
- **Channels** – check PTT boxes to assign the actions above.

Click «**OK**» to save hotkeys configuration.

6. Add Radio Interface Tab – select to add new Radio Interface Tab. Select new Radio Interface in the upper part of the **Calls Pane**:



Date	Control Station	Sender	Recipient	Message	Note	Ext. Note
17.10.2013 14:29:53	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:02)		
17.10.2013 14:28:58	Control Station...	Radio 234	All	Broadcast call from dispatcher 'Radio 23...		
17.10.2013 14:28:58	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 14:28:50	Control Station...	Radio 234	All	Broadcast call from dispatcher 'Radio 23...		
17.10.2013 14:28:50	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:02)		
17.10.2013 14:28:47	Control Station...	Radio 234	All	Broadcast call from dispatcher 'Radio 23...		
17.10.2013 14:28:46	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:56:18	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:55:53	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:00:26	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:00)		

6. Delete Radio Interface Tab – select to delete selected Radio Interface Tab.

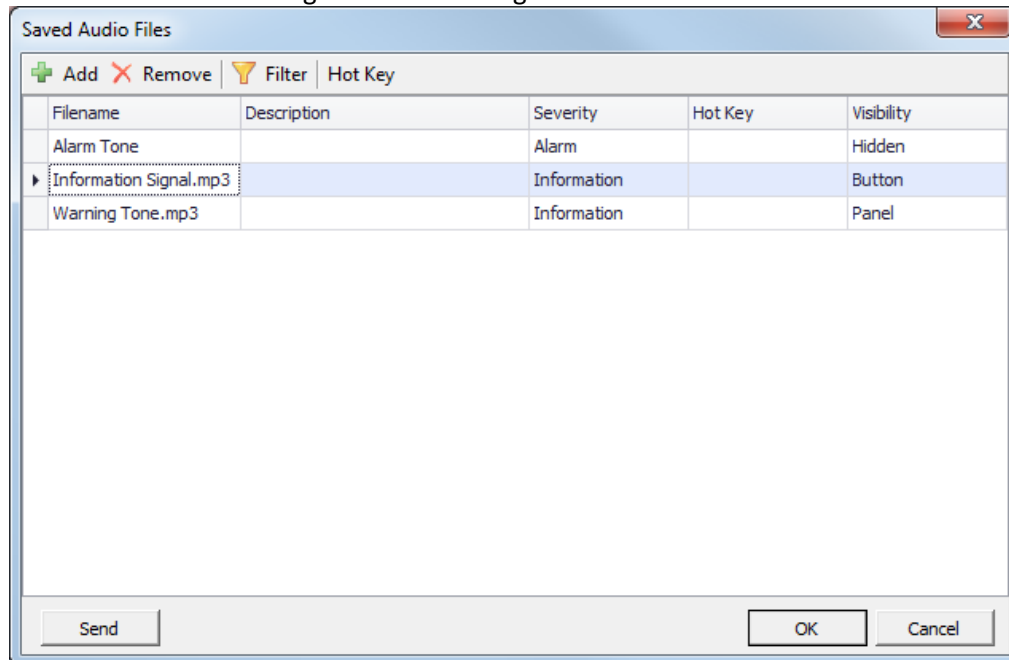
Note: Default Radio Interface Tab is not available to delete.

7. Saved Audio Files

This option allows to add configured Voice Messages on the Calls Pane to send it by clicking Voice Message box.

To configure Voice Messages settings see [Tasks , Voice Message](#)

Go to **View, Saved Audio Files** to configure Voice Messages box:



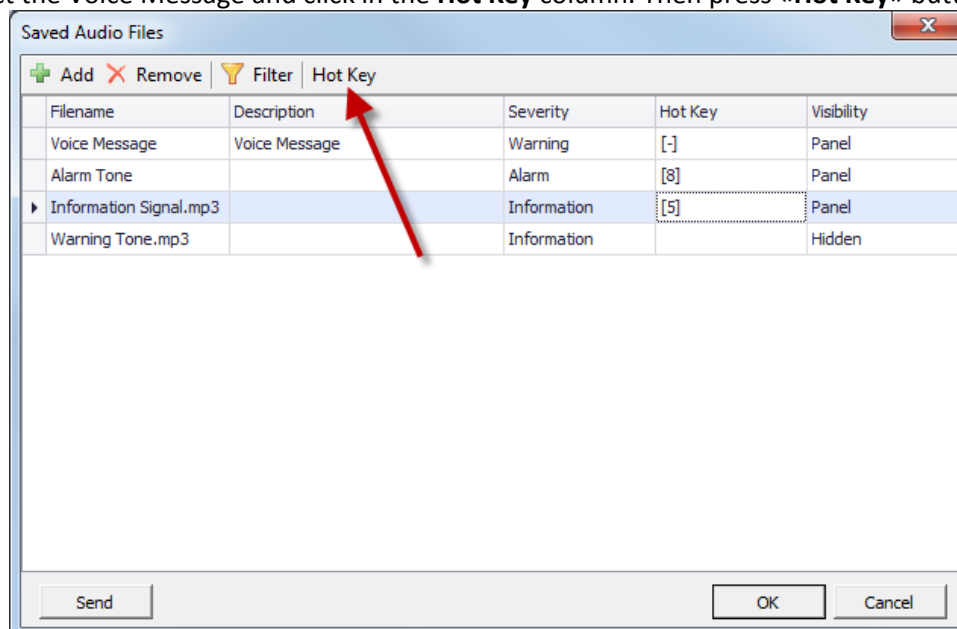
Filename – specify the name of the message displayed on the Calls Pane;

Description – add the description for Voice Message;

Severity – select severity level in the dropdown list:

- **Information** – select to set low severity level
- **Warning** – select to set middle severity level
- **Alarm** – select to set high severity level.

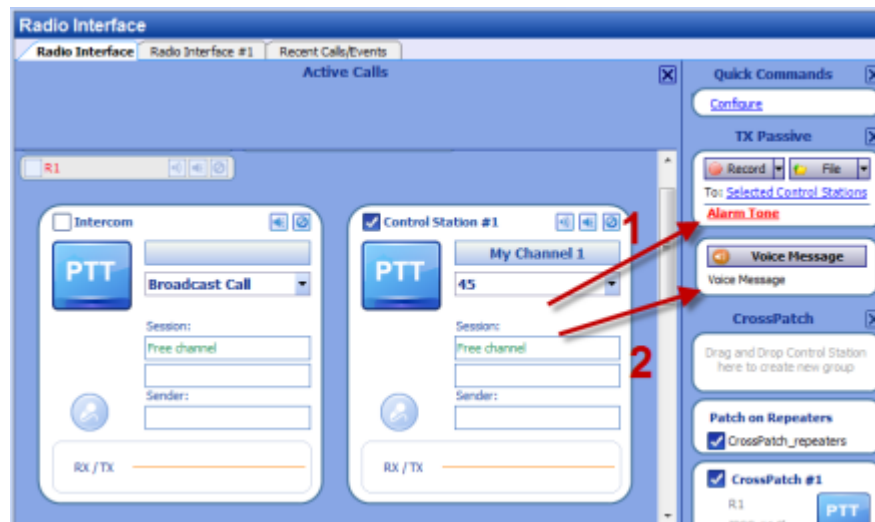
Hot Key – select the Voice Message and click in the **Hot Key** column. Then press «**Hot Key**» button:



When the informational message appears press any key on the keyboard to set it as **Hot Key** for selected Voice Message.

Visibility – select the Voice Message box view:

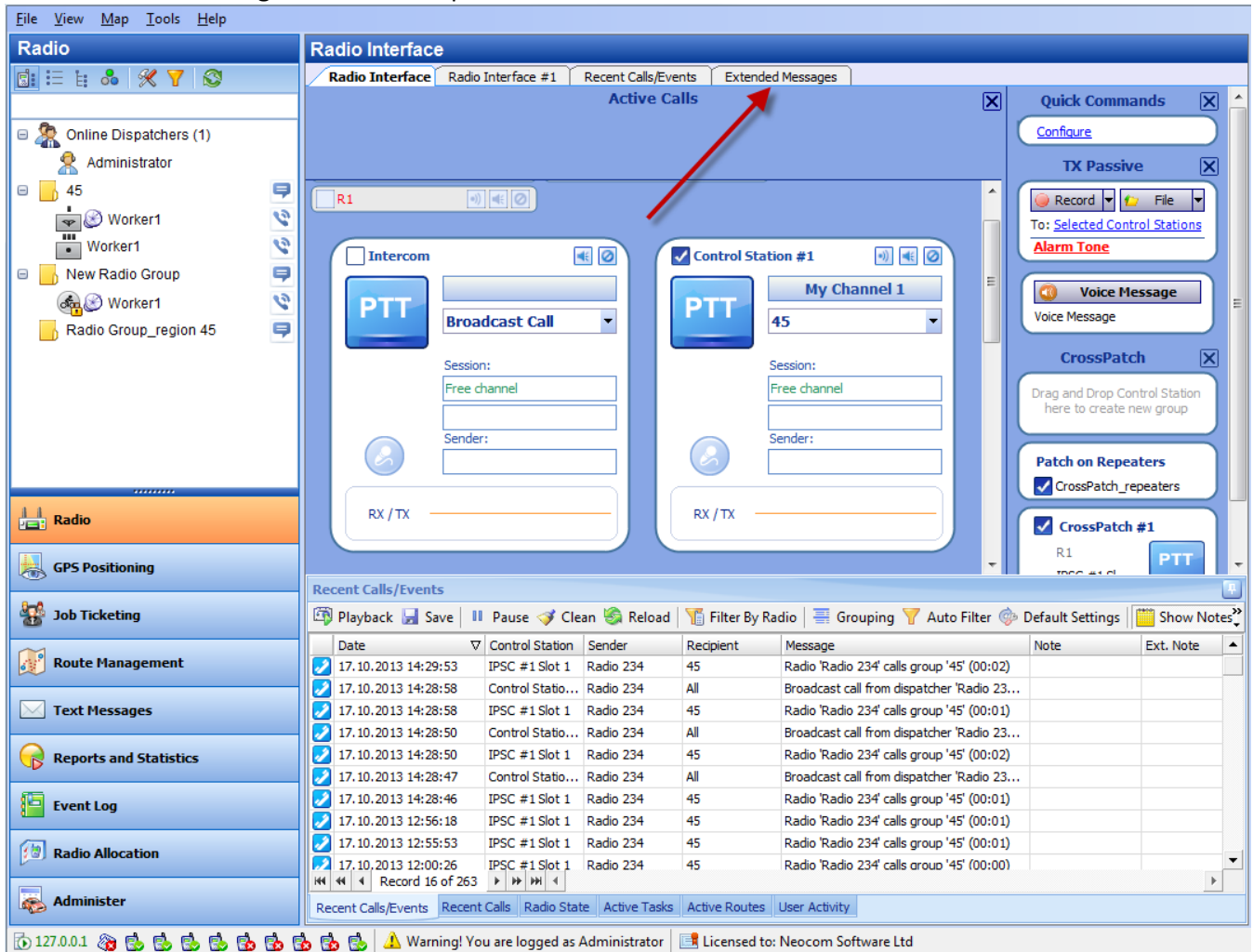
- **Hidden** – select to hide the Voice Message box;
- **Button** – select to display the Voice Message as a button (1);
- **Panel** – select to display the Voice Message as a panel (2).



Click «OK» to add the Voice Message.

8. /9. **Large Control Station Boxes / Small Control Station Boxes** – select Control Station Boxes size.
10. **Show Active Calls Panel** – select to display Active Calls Panel in the Dispatch Console.
11. **Show Quick Commands Panel** – select to display Quick Commands Panel in the Dispatch Console.
12. **Show TX Passive Panel** – select to display TX Passive Panel in the Dispatch Console.
13. **Show CrossPatch Panel** – select to display CrossPatch Panel in the Dispatch Console.
14. **Show Extended Messages Tab** – select to display Extended Messages Tab in the Dispatch Console.

Go to **Extended Messages Tab** on the top of the **Calls Pane**:



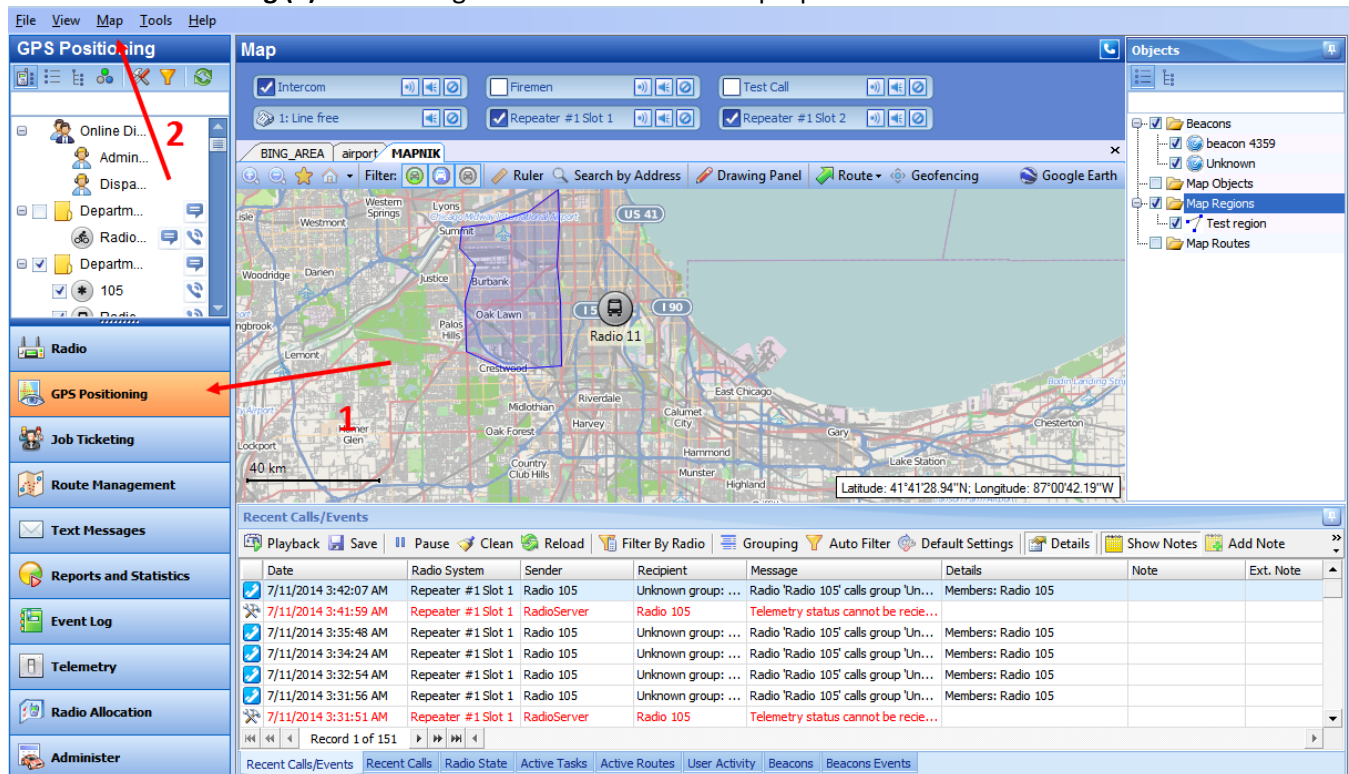
The screenshot shows the TRBOnet software interface. On the left is a sidebar with various modules: Radio, GPS Positioning, Job Ticketing, Route Management, Text Messages, Reports and Statistics, Event Log, Radio Allocation, and Administer. The main window is titled 'Radio Interface' and has several tabs: 'Radio Interface', 'Radio Interface #1', 'Recent Calls/Events', and 'Extended Messages'. A red arrow points to the 'Extended Messages' tab. Below the tabs, there are two main sections: 'Active Calls' and 'Recent Calls/Events'. The 'Active Calls' section shows two call windows for 'Intercom' and 'Control Station #1'. The 'Recent Calls/Events' section shows a table of recent calls.

Date	Control Station	Sender	Recipient	Message	Note	Ext. Note
17.10.2013 14:29:53	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:02)		
17.10.2013 14:28:58	Control Statio...	Radio 234	All	Broadcast call from dispatcher 'Radio 23...		
17.10.2013 14:28:58	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 14:28:50	Control Statio...	Radio 234	All	Broadcast call from dispatcher 'Radio 23...		
17.10.2013 14:28:50	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:02)		
17.10.2013 14:28:47	Control Statio...	Radio 234	All	Broadcast call from dispatcher 'Radio 23...		
17.10.2013 14:28:46	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:56:18	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:55:53	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:00:26	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:00)		

At the bottom of the interface, there is a status bar showing the version '127.0.0.1', a warning 'Warning! You are logged as Administrator', and the license information 'Licensed to: Neocom Software Ltd'.

Map

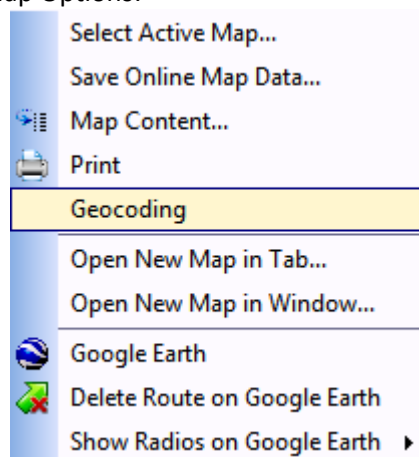
Select **GPS Positioning (1)** in the Navigation Pane to enable Map Options:



The screenshot shows the TRBOnet software interface. On the left is the 'Navigation Pane' with a list of options: Online Di..., Admin..., Dispa..., Departm..., Radio, **GPS Positioning** (highlighted with a red arrow labeled '1'), Job Ticketing, Route Management, Text Messages, Reports and Statistics, Event Log, Telemetry, Radio Allocation, and Administer. The main window is titled 'Map' and displays a map of a city area. Above the map are various controls like 'Intercom', 'Firemen', 'Test Call', and 'Repeater #1 Slot 1'. Below the map is a 'Recent Calls/Events' table. On the right side, there is an 'Objects' pane showing a tree view of map objects like 'Beacons', 'Unknown', 'Map Objects', 'Map Regions', 'Test region', and 'Map Routes'.

Date	Radio System	Sender	Recipient	Message	Details	Note	Ext. Note
7/11/2014 3:42:07 AM	Repeater #1 Slot 1	Radio 105	Unknown group: ...	Radio 'Radio 105' calls group 'Un...	Members: Radio 105		
7/11/2014 3:41:59 AM	Repeater #1 Slot 1	RadioServer	Radio 105	Telemetry status cannot be rede...			
7/11/2014 3:35:48 AM	Repeater #1 Slot 1	Radio 105	Unknown group: ...	Radio 'Radio 105' calls group 'Un...	Members: Radio 105		
7/11/2014 3:34:24 AM	Repeater #1 Slot 1	Radio 105	Unknown group: ...	Radio 'Radio 105' calls group 'Un...	Members: Radio 105		
7/11/2014 3:32:54 AM	Repeater #1 Slot 1	Radio 105	Unknown group: ...	Radio 'Radio 105' calls group 'Un...	Members: Radio 105		
7/11/2014 3:31:56 AM	Repeater #1 Slot 1	Radio 105	Unknown group: ...	Radio 'Radio 105' calls group 'Un...	Members: Radio 105		
7/11/2014 3:31:51 AM	Repeater #1 Slot 1	RadioServer	Radio 105	Telemetry status cannot be rede...			

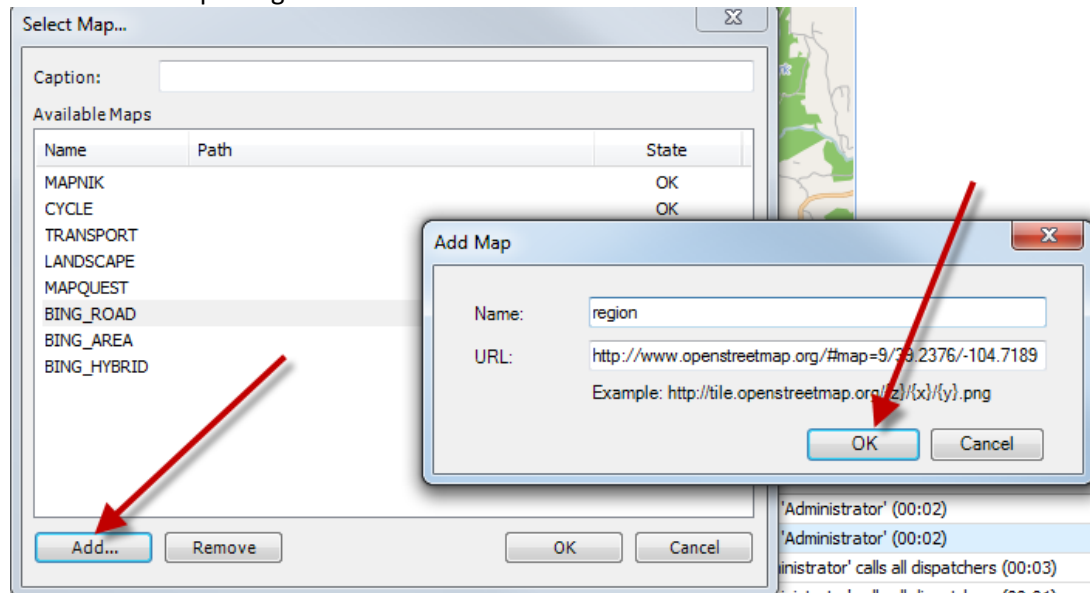
Click «**Map**» button (2) to open the Map Options:



The screenshot shows the 'Map' options menu. The menu items are: Select Active Map..., Save Online Map Data..., Map Content..., Print, **Geocoding** (highlighted), Open New Map in Tab..., Open New Map in Window..., Google Earth, Delete Route on Google Earth, and Show Radios on Google Earth ▶.

1 – Select Active Map

Click to select an active map a tab. Type in the **Caption** for the Map and select it in the list of available maps. User can add a custom map using its URL:



Click **Add** button, type in the **Name** for new map and specify the **URL**. Type in map URL, as shown in the example below, in the URL field.

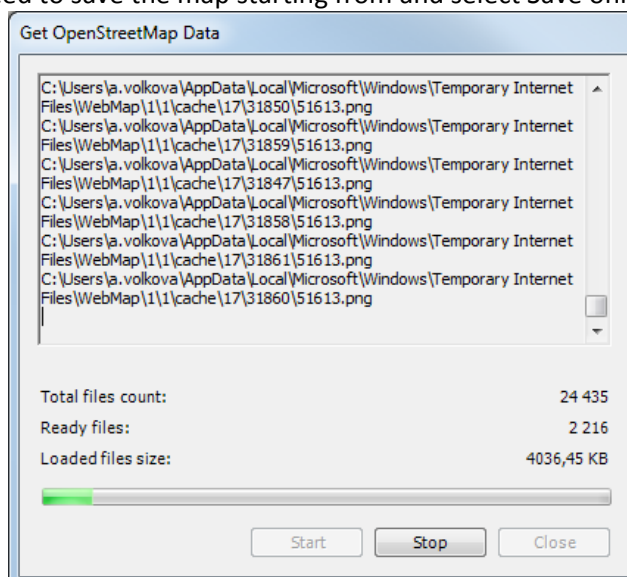
- **Z** – zoom. Type in zoom value for the map.
- **X** – coordinate in X –direction.
- **Y** – coordinate in Y – direction.

Click «**OK**» to add a map.

Note: You can only select the map of the same format the current tab map is. For example, if You click «**Map**» button, **Select Active Map** in a tab with Open Street Map format map, the Select Map... window will display the available Open Street Map format maps. Thus, if you need to select another format map, use the **Map , Open Map in Tab** or the **Map , Open Map in Window** option.

2 – Save Online Map Data

Select the map region you need to save the map starting from and select Save online map data:

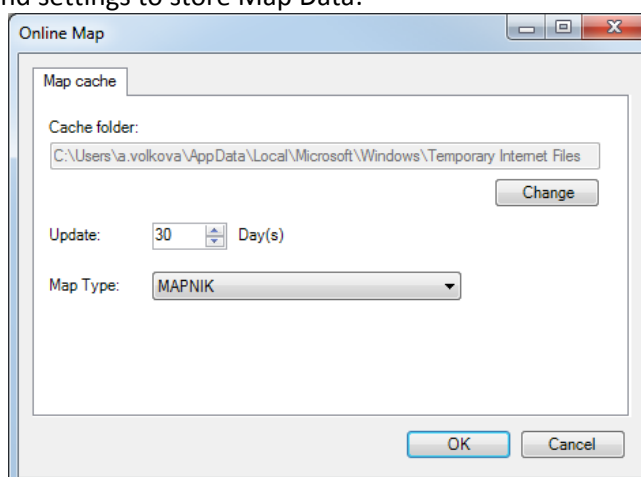


Click «**Start**» button and wait for the system to save the files. The procedure may take several minutes.

Note: The system will cash the map «downwards» which means User will not be able to zoom out the selected region in offline mode. To zoom the offline map see the following [article](#).

3 – Map Content

Select to specify the folder and settings to store Map Data:



- **Cache folder** – click «**Change**» button to select the folder on the PC to store the Map Data;
- **Update** – select data updating period;

Note: when «0» value selected, the map will not update.

- **Map Type** – select your Map type in the dropdown list. For more details on maps used in TBOnet Dispatch Software see [Map Types](#) page.

Click «**OK**» to save map cache settings.

Map Types

Online maps:

- **OpenStreetMaps** – free online map. Includes MAPNIK, CYCLE, TRANSPORT, LANDSCAPE and MAPQUEST subtypes. For more details on OpenStreetMaps visit official web site: <http://www.openstreetmap.org>
- **Microsoft BING** – commercial maps from Microsoft. Includes BING_ROAD, BING_AREA and BING_HYBRID subtypes. User can try BING Maps for 90 days and then get a Basic Key. Visit <http://msdn.microsoft.com/en-us/library/ff428642.aspx> to get a Basic Key.

Offline Maps

- **TRBOnet** – internal map-making resource. User can customize a part of online maps according to requirements. For more details on map calibration go to TRBOnet knowledge base and read the following article: <http://kb.trbonet.com/public.pl?Action=PublicFAQZoom;ItemID=27>.
- **TMap** – internal map-making resource. User can create an offline copy of online maps for selected region according to requirements. User can create a map using any picture via TRBOnet.Map Edit tool. Go to C:\Program Files\Neocom Software\TRBOnet Dispatch Software\TRBOnet.MapEdit.exe. For more details on map calibration go to TRBOnet knowledge base and read the following article: <http://kb.trbonet.com/public.pl?Action=PublicFAQZoom;ItemID=28>.
- **GIS Panorama** – offline Russian map. For more details visit the official web site: <http://www.gisinfo.ru/>
- **Beacon 2D** – two-dimension offline map for Indoor positioning. User can create maps using Beacon2DMapGenerator tool. To get Beacon2DMapGenerator contact your local TRBOnet dealer.
- **Beacon 3D** – tree-dimension map for Indoor positioning. User can use any dicectX(.x) files as map.
- **MapLib map format** – free offline map. Requires a lot of internal memory. Requires Franson GpsTools. For more details on Franson GpsTools visit the official web site: <http://franson-gpstools.software.informer.com/2.3/>
- **TatukGIS** – commercial offline map. For more details on TatukGIS visit the official web site: <http://www.tatukgis.com/>.

4. Print

Select to print the region. Select printer and set its parameters. Click «OK» to print.

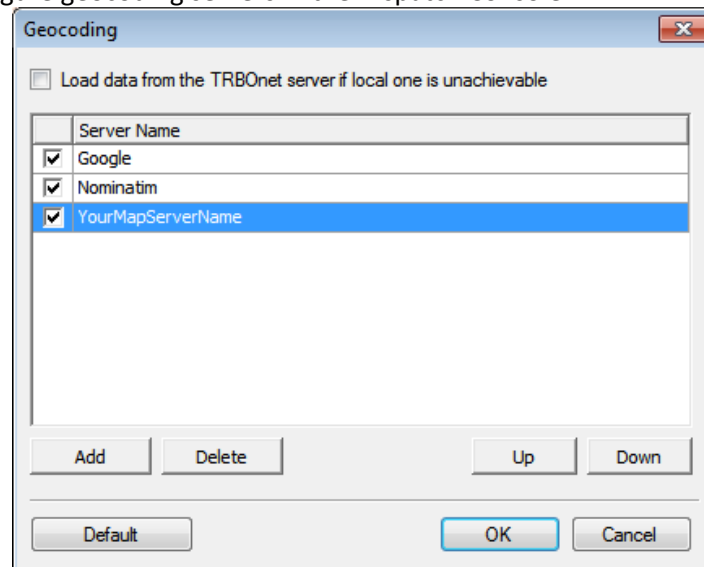
5. Geocoding

Geocoding server resolves GPS coordinates to street names and address for reports and other needs, for example in “GPS activity for period” reports. Online geocoding services can be used like Google or Nominatim, but they are not for free or limited by amount or requests. Also, custom geocoding server can be configured.

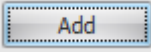
You can configure geocoding servers in three ways depending on server/console PC Internet access and your local geocoding server settings:

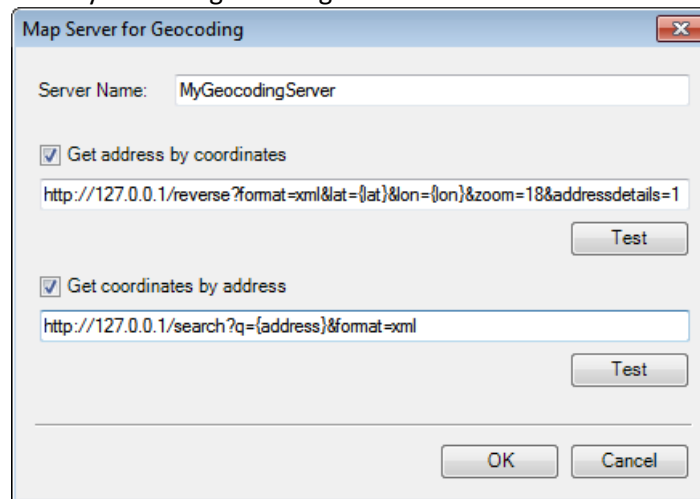
1. Dispatcher has Internet access and/or server PC has no Internet access. Dispatcher can connect to preconfigured (Google and Nominatim) and/or local corporate geocoding servers via Dispatch Console.
2. Server PC has Internet access and/or Dispatcher has no Internet access. Dispatcher can connect to preconfigured (Google and Nominatim) and/or local corporate geocoding servers via Server PC (see [Map Servers for Geocoding](#) section).
3. Your own local geocoding server in the local network. You can configure data resolving both in the Server Configurator and in the Dispatch Console.

Select **Geocoding** to configure geocoding servers in the Dispatch Console:



- **Load data from the TRBOnet server if local one is unachievable** – select to allow Dispatch Console resolve GPS data from Server PC.

Click  button to add your local geocoding server:



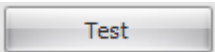
The dialog box 'Map Server for Geocoding' contains the following fields and controls:

- Server Name:** A text field containing 'MyGeocodingServer'.
- Get address by coordinates:** A checked checkbox. Below it is a text field with the URL: `http://127.0.0.1/reverse?format=xml&lat={lat}&lon={lon}&zoom=18&addressdetails=1`. To the right of this field is a 'Test' button.
- Get coordinates by address:** A checked checkbox. Below it is a text field with the URL: `http://127.0.0.1/search?q={address}&format=xml`. To the right of this field is a 'Test' button.
- At the bottom right are 'OK' and 'Cancel' buttons.

- **Server Name** – type in new geocoding server name;
- **Get address by coordinates** – select to resolve GPS coordinates to street addresses.

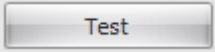
Specify the geocoding server address (e.g. <http://IP Address/lat={lat}&lon={lon}>)
<http://mapserveraddress.com/lat={lat}&lon={lon}>);

Note: {lat}{lon} variables are necessary to input to allow TRBOnet Dispatch Software read radio GPS coordinates.

Click  button to check the connection to a map server. Input any GPS coordinates to receive street address details.

- **Get coordinates by address** – select to resolve street addresses to GPS coordinates (e.g. for Search By Address feature).

Note: {address} variable is necessary to input to allow TRBOnet Dispatch Software search map objects by address.

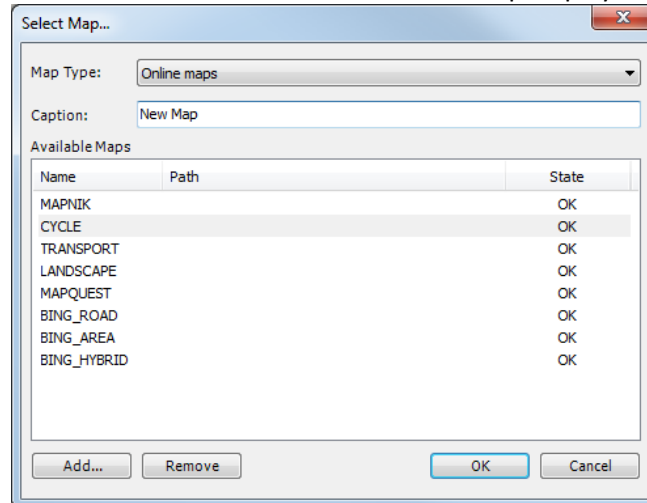
Click  button to check the connection to a geocoding server. Input any address to receive list of map objects with selected address.

Use buttons **Up** and **Down** to select the priority level for geocoding servers. When radio GPS data requested via geocoding servers added in Server Configurator, TRBOnet RadioServer requests GPS data from geocoding servers according to Priority level. The first geocoding server in the list has the highest priority level. In case the first geocoding server disabled, GPS data comes from the second geocoding server in the list.

Administrator should check geocoding servers in the list to receive GPS data.

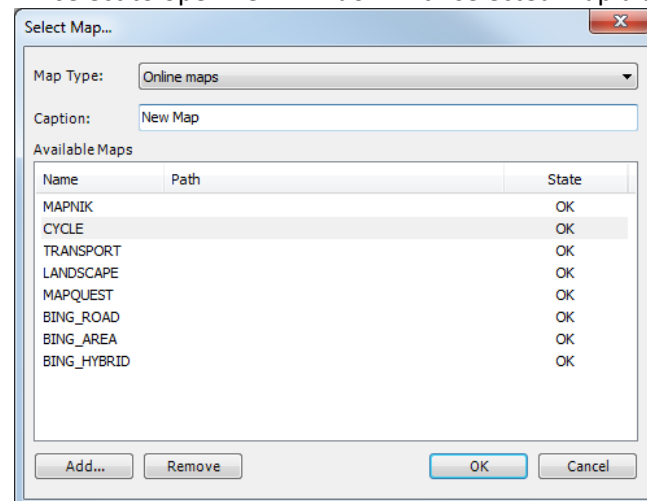
- **Request address when GPS coordinates has been received** – select to resolve GPS coordinates to street addresses immediately when by GPS event. Street addresses and GPS coordinates are saved in the TRBOnet database to optimize response time for any street addresses requests e.g. GPS reports and reduce geocoding server load.

6. Open New Map in Tab – select to add the new tab with selected map displayed:

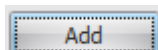
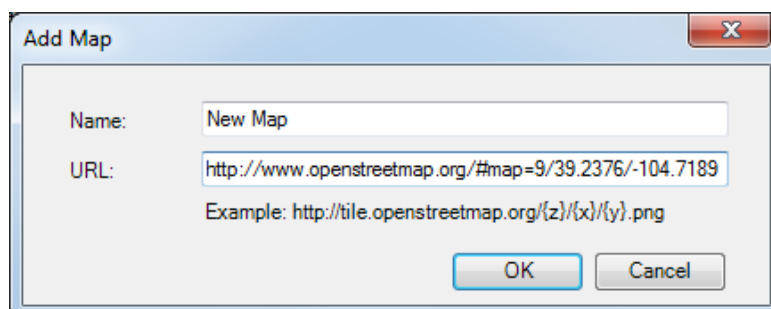


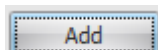
- **Map Type** – select Map Type in the Dropdown List;
- **Caption** – specify the caption for the new map. New Tab Name will be the same as Caption;

7. Open New Map in Window – select to open new Window with selected map displayed:



- **Map Type** – select Map Type in the Dropdown List;
- **Caption** – specify the caption for the new map. New Tab Name will be the same as Caption;
- **Available Maps** – select map in the table. User can add a map using its URL:



Click  button, type in the Name for new map and specify the URL.
 Click «OK» to open the window with new map.

8. Google Earth – TRBOnet Dispatch Software supports Google Earth service. Go to **Map, Google Earth** to open the application.

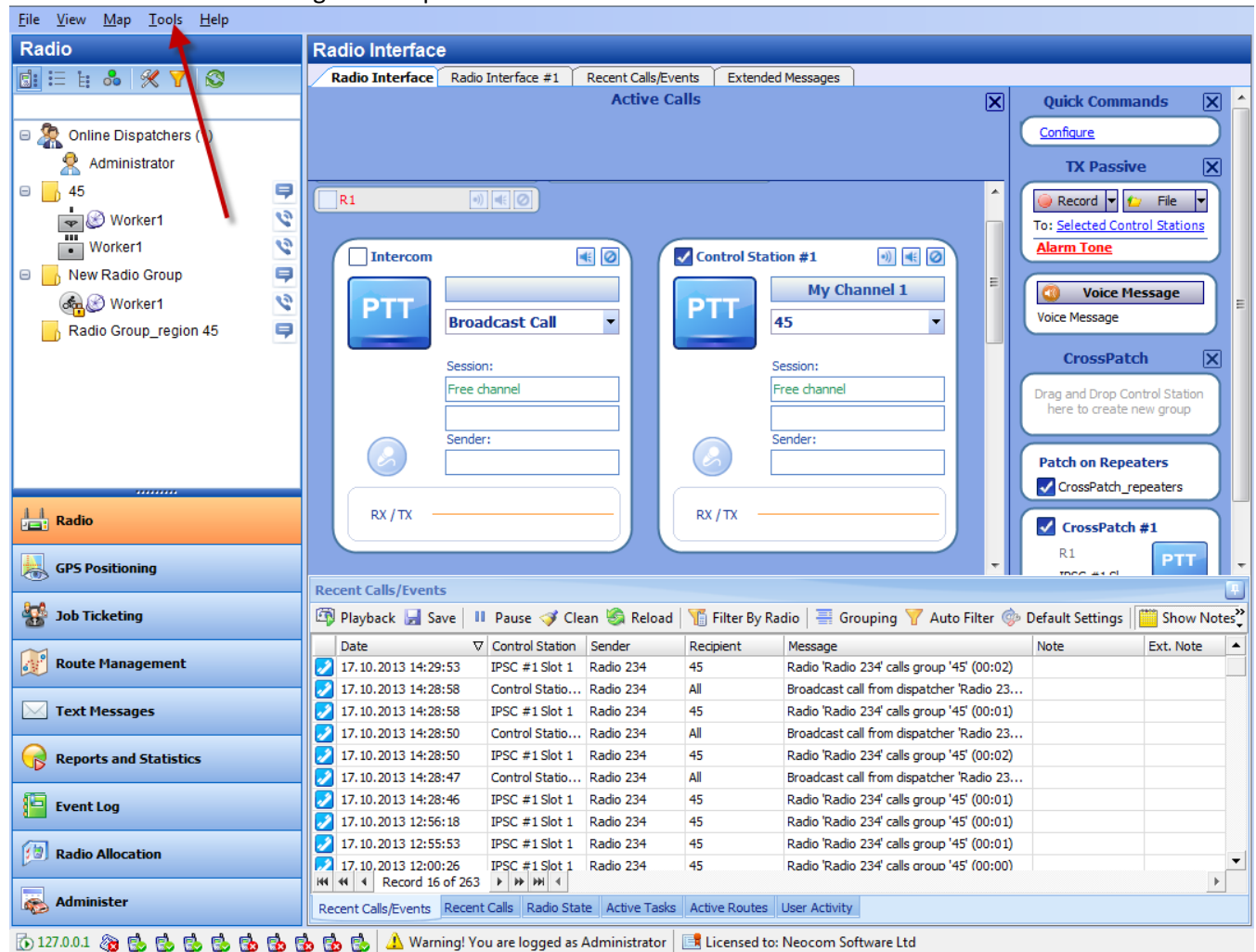
Note: Google Earth should be installed on the PC. For more details on working in Google Earth visit Google official website <http://www.google.co.uk/earth>

9. Delete Routes from Google Earth – select to delete all routes from Google Earth.

10. Show Radios on Google Earth – select radios type to display on Google Earth.

Tools

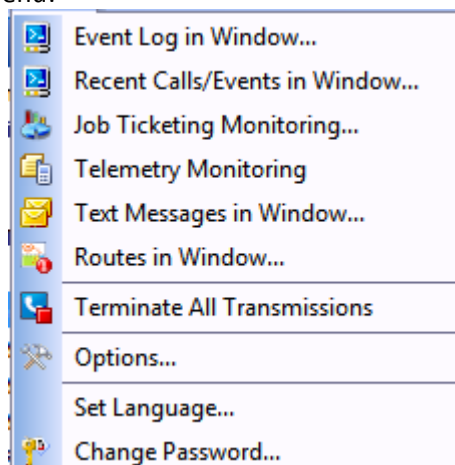
Select **Tools Menu** to manage the Dispatch Console:



The screenshot shows the Neocom Software interface. The top menu bar includes File, View, Map, **Tools**, and Help. The Tools menu is highlighted with a red arrow. The left sidebar contains a tree view of the system structure, including Online Dispatchers (Administrator, Worker1), Radio Group, and Radio Group_region 45. The main window displays the Radio Interface, which includes a Radio Interface #1 tab, Recent Calls/Events, and Extended Messages. The Radio Interface section shows two radio units (R1 and R2) with PTT buttons and session information. The Recent Calls/Events section displays a table of recent calls and events.

Date	Control Station	Sender	Recipient	Message	Note	Ext. Note
17.10.2013 14:29:53	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:02)		
17.10.2013 14:28:58	Control Station	Radio 234	All	Broadcast call from dispatcher 'Radio 234'		
17.10.2013 14:28:58	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 14:28:50	Control Station	Radio 234	All	Broadcast call from dispatcher 'Radio 234'		
17.10.2013 14:28:50	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:02)		
17.10.2013 14:28:47	Control Station	Radio 234	All	Broadcast call from dispatcher 'Radio 234'		
17.10.2013 14:28:46	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:56:18	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:55:53	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:01)		
17.10.2013 12:00:26	IPSC #1 Slot 1	Radio 234	45	Radio 'Radio 234' calls group '45' (00:00)		

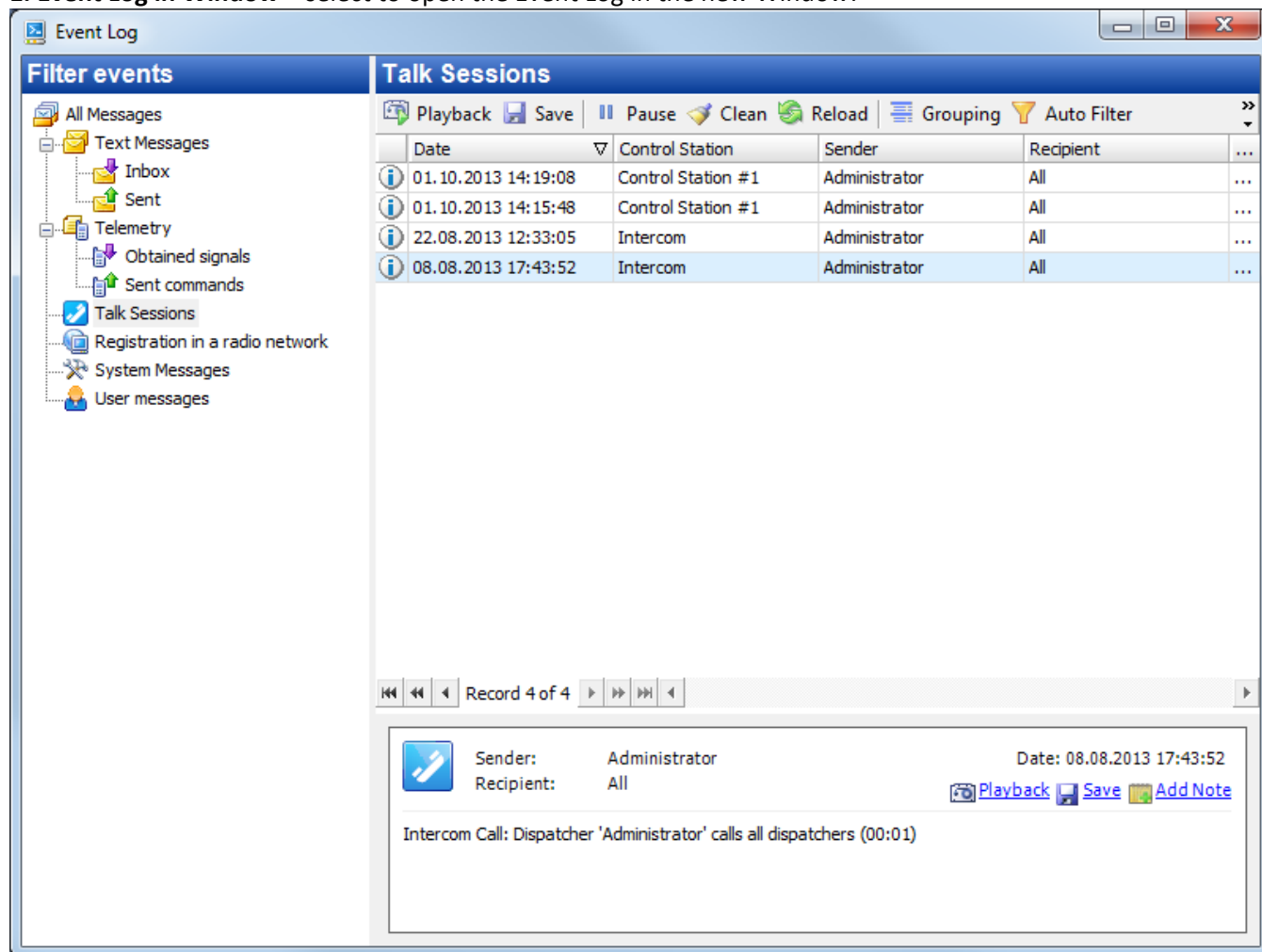
Click «**Tools**» to open the Context menu:



The screenshot shows the context menu for the Tools menu. The menu items are:

- Event Log in Window...
- Recent Calls/Events in Window...
- Job Ticketing Monitoring...
- Telemetry Monitoring
- Text Messages in Window...
- Routes in Window...
- Terminate All Transmissions
- Options...
- Set Language...
- Change Password...

1. Event Log in Window – select to open the Event Log in the new Window:



The screenshot shows the 'Event Log' window. On the left is a 'Filter events' tree with categories like All Messages, Text Messages, Telemetry, and Talk Sessions. The 'Talk Sessions' category is selected. The main area displays a table of Talk Sessions with columns for Date, Control Station, Sender, and Recipient. The selected record is from 08.08.2013 17:43:52, sent by Administrator to All. Below the table, a detailed view of the selected event shows the sender and recipient, and the message content: 'Intercom Call: Dispatcher 'Administrator' calls all dispatchers (00:01)'.

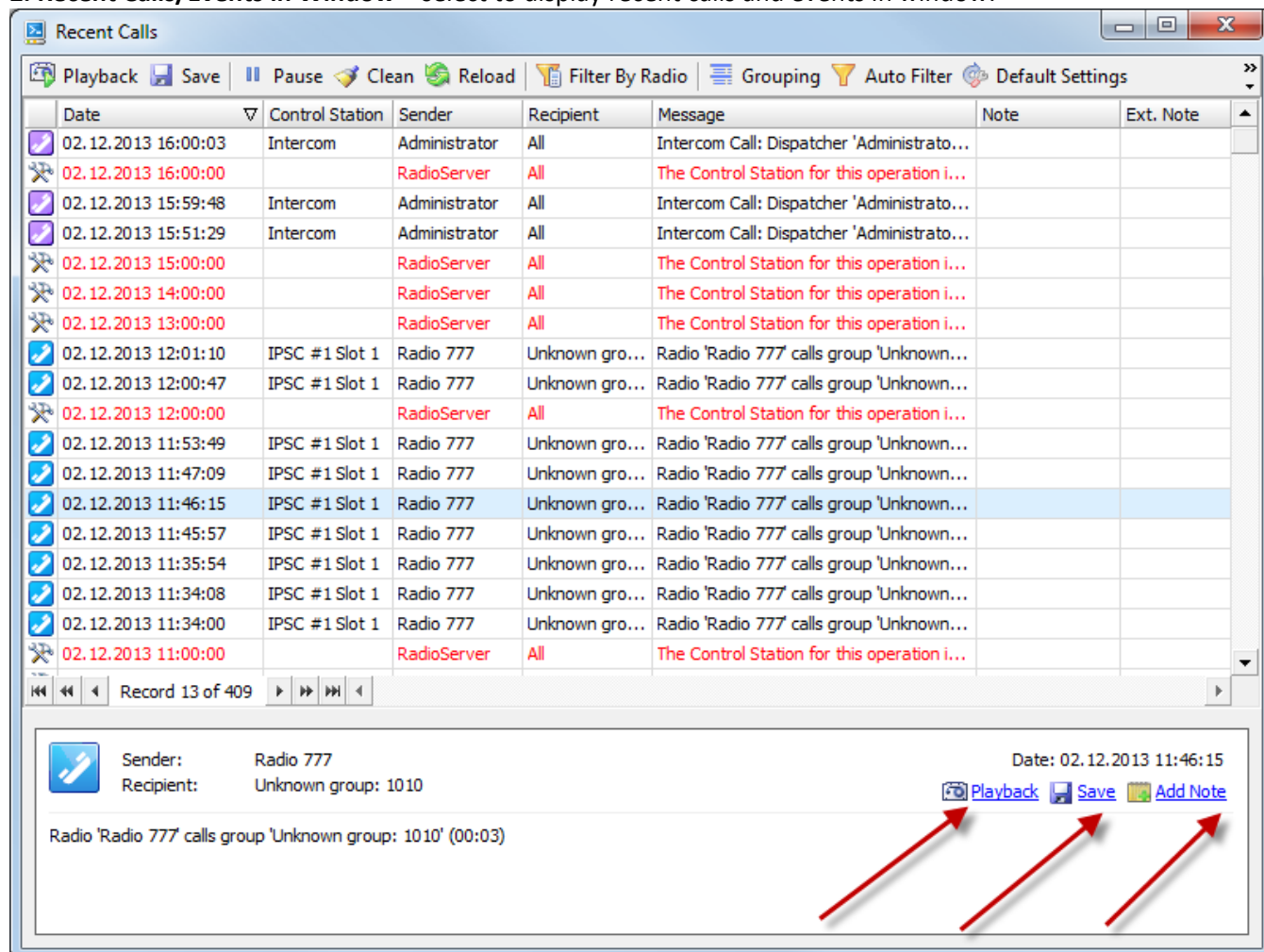
Date	Control Station	Sender	Recipient
01.10.2013 14:19:08	Control Station #1	Administrator	All
01.10.2013 14:15:48	Control Station #1	Administrator	All
22.08.2013 12:33:05	Intercom	Administrator	All
08.08.2013 17:43:52	Intercom	Administrator	All

Record 4 of 4

Sender: Administrator
 Recipient: All
 Date: 08.08.2013 17:43:52
[Playback](#) [Save](#) [Add Note](#)

Intercom Call: Dispatcher 'Administrator' calls all dispatchers (00:01)

2. Recent Calls/Events in Window – select to display recent calls and events in window:



Recent Calls

Playback Save Pause Clean Reload Filter By Radio Grouping Auto Filter Default Settings

Date	Control Station	Sender	Recipient	Message	Note	Ext. Note
02.12.2013 16:00:03	Intercom	Administrator	All	Intercom Call: Dispatcher 'Administrato...		
02.12.2013 16:00:00		RadioServer	All	The Control Station for this operation i...		
02.12.2013 15:59:48	Intercom	Administrator	All	Intercom Call: Dispatcher 'Administrato...		
02.12.2013 15:51:29	Intercom	Administrator	All	Intercom Call: Dispatcher 'Administrato...		
02.12.2013 15:00:00		RadioServer	All	The Control Station for this operation i...		
02.12.2013 14:00:00		RadioServer	All	The Control Station for this operation i...		
02.12.2013 13:00:00		RadioServer	All	The Control Station for this operation i...		
02.12.2013 12:01:10	IPSC #1 Slot 1	Radio 777	Unknown gro...	Radio 'Radio 777' calls group 'Unknown...		
02.12.2013 12:00:47	IPSC #1 Slot 1	Radio 777	Unknown gro...	Radio 'Radio 777' calls group 'Unknown...		
02.12.2013 12:00:00		RadioServer	All	The Control Station for this operation i...		
02.12.2013 11:53:49	IPSC #1 Slot 1	Radio 777	Unknown gro...	Radio 'Radio 777' calls group 'Unknown...		
02.12.2013 11:47:09	IPSC #1 Slot 1	Radio 777	Unknown gro...	Radio 'Radio 777' calls group 'Unknown...		
02.12.2013 11:46:15	IPSC #1 Slot 1	Radio 777	Unknown gro...	Radio 'Radio 777' calls group 'Unknown...		
02.12.2013 11:45:57	IPSC #1 Slot 1	Radio 777	Unknown gro...	Radio 'Radio 777' calls group 'Unknown...		
02.12.2013 11:35:54	IPSC #1 Slot 1	Radio 777	Unknown gro...	Radio 'Radio 777' calls group 'Unknown...		
02.12.2013 11:34:08	IPSC #1 Slot 1	Radio 777	Unknown gro...	Radio 'Radio 777' calls group 'Unknown...		
02.12.2013 11:34:00	IPSC #1 Slot 1	Radio 777	Unknown gro...	Radio 'Radio 777' calls group 'Unknown...		
02.12.2013 11:00:00		RadioServer	All	The Control Station for this operation i...		

Record 13 of 409

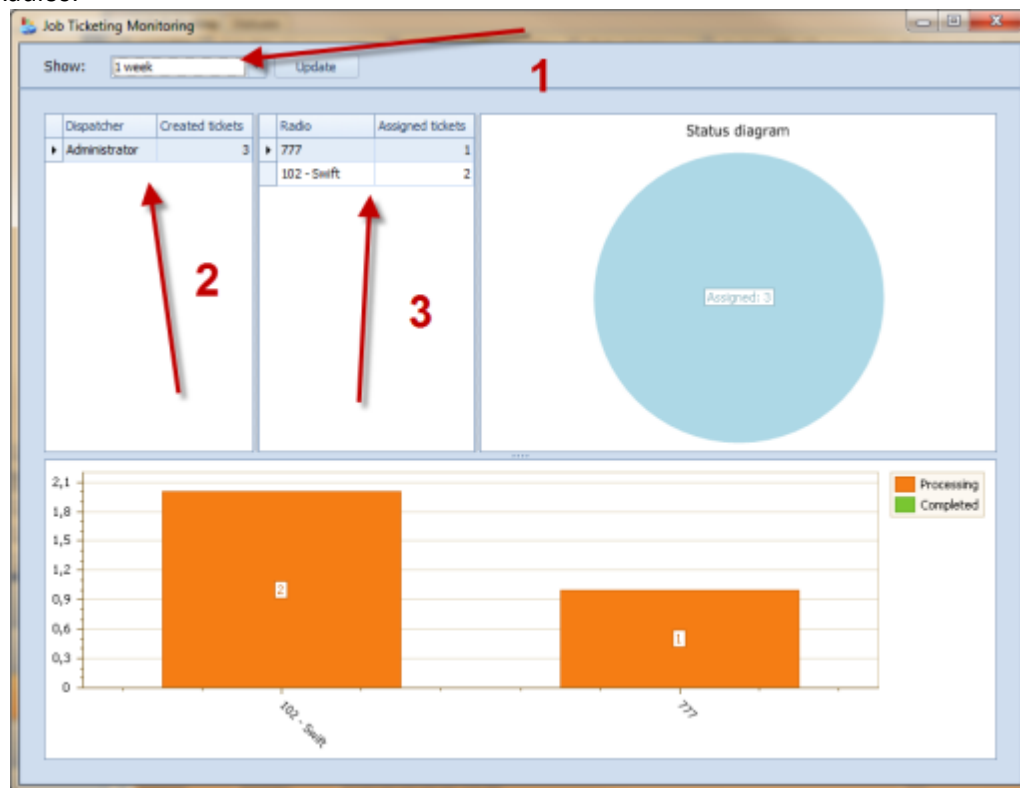
Sender: Radio 777
 Recipient: Unknown group: 1010
 Date: 02.12.2013 11:46:15

Radio 'Radio 777' calls group 'Unknown group: 1010' (00:03)

Playback Save Add Note

Click «**Playback**» button to playback recorded calls;
 Click «**Save**» button to save calls as audio files (*.wav);
 Click «**OK**» to add a note.

3. Job Ticketing Monitoring – select to monitor all Job Tickets in the system, created by Dispatchers and assigned to Radios:

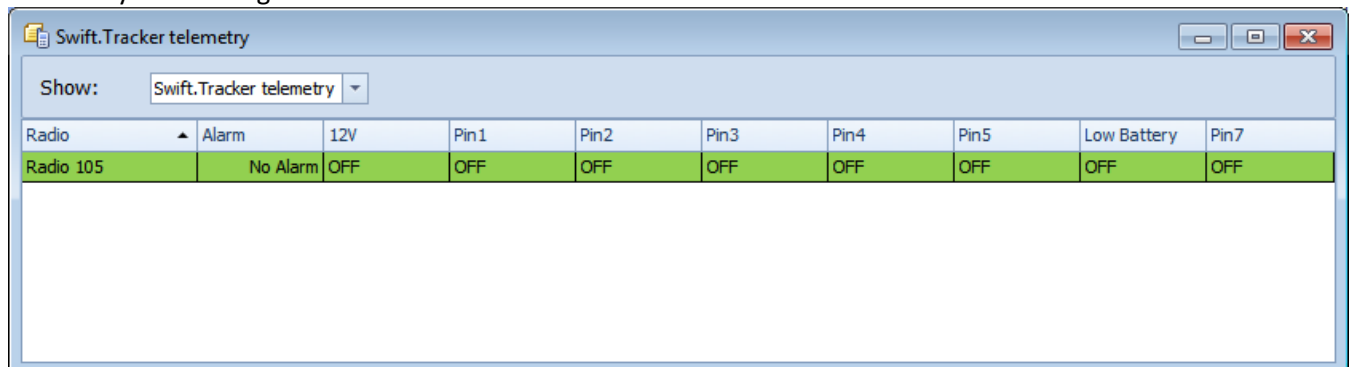


- 1 - Select time period to show Job Ticketing data;
- 2 – Monitor tasks created by Dispatchers;
- 3 – Monitor tasks, assigned to radios;

All tasks data is shown graphically and in the form of the Status Diagram.

4 – Telemetry Monitoring

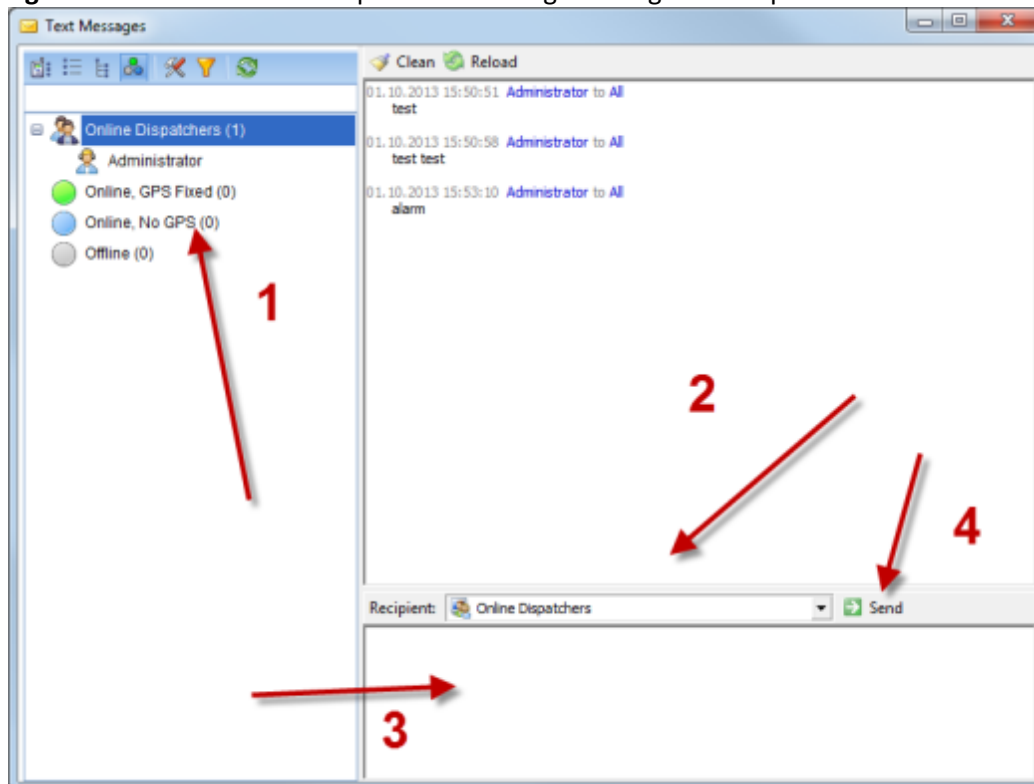
New Dispatcher can create different telemetry profiles for radios and devices (e.g. Swift.Tracker, Indoor beacons). For more details see [Telemetry](#) section. For monitoring all or selected telemetry profiles use Telemetry Monitoring tool.



Radio	Alarm	12V	Pin1	Pin2	Pin3	Pin4	Pin5	Low Battery	Pin7
Radio 105	No Alarm	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

- **Show** – select telemetry profile to display the data.

5. Text Messages in Window – select to open Text Messages dialog in the separate window:



1 – User can see Online Dispatchers in the list;

2 – Select the Recipient in the dropdown list. User can select all online Dispatchers, radio groups and radios registered in the system;

3 – Type in Text Message in the field;

Click «**Send**» button to send the Text Message.

The text Message will be displayed in the field above.

6. Route Management – select to display Route Management page. For more details on Route Management see [Route](#) section.

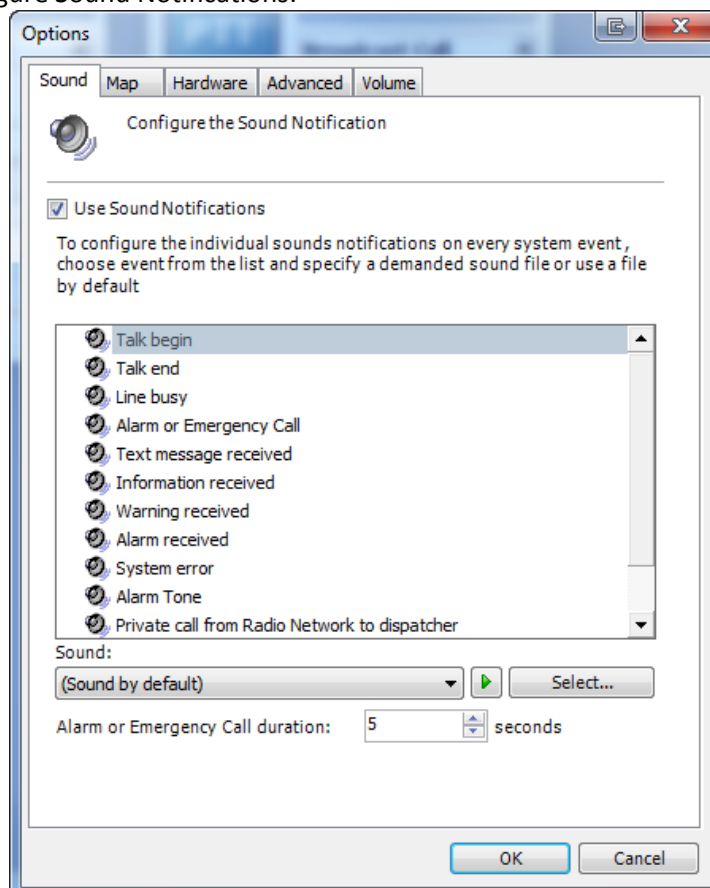
7. Terminate All Transmissions – select to terminate all Voice calls in the system.

Options

Select to customize Console Settings.

Sound

Go to **Sound** Tab to configure Sound Notifications:




- **Use Sound Notifications** – check this option to enable sound notifications in Dispatch Console.

Choose the event in the list and specify the sound.

Sound:

- Select **Sound by default** in the dropdown list to set the default sound for the event.
- Select **Disabled** to disable sound notification for the event.



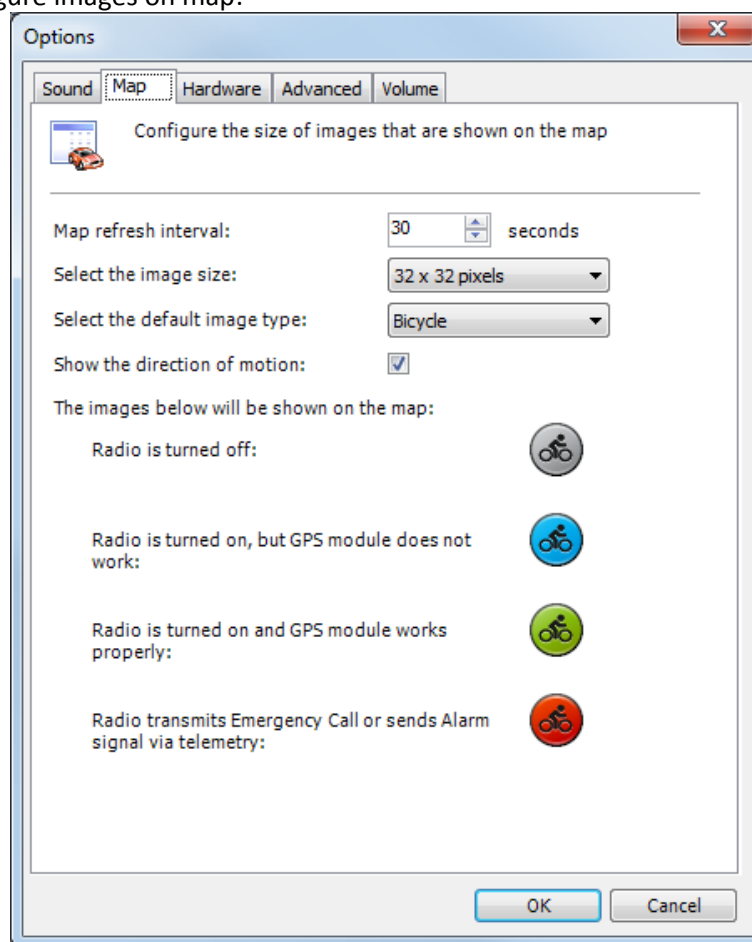
Click  button to hear the current sound notification.

Click «**Select**» button to browse the sound on your PC.

- **Alarm of Emergency Call duration** – select time value in seconds for Alarm Tone when Emergency Call received.

Map

Go to Map Tab to configure images on map:



- **Map refresh interval** – type in time period;
- **Select the image size** in the dropdown list;
- **Select the default image type** – in the dropdown list;
- **Show the direction of motion** – select to monitor objects' motion.

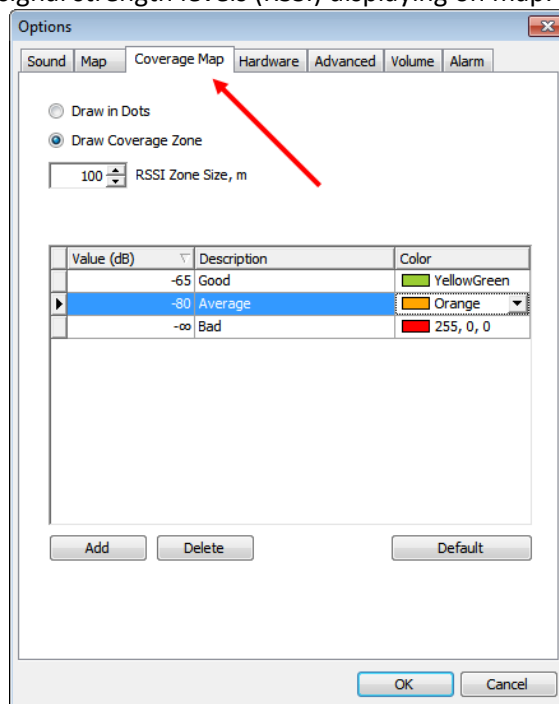
Coverage Map

TRBOnet Dispatch Software allows to see RSSI levels on a map.

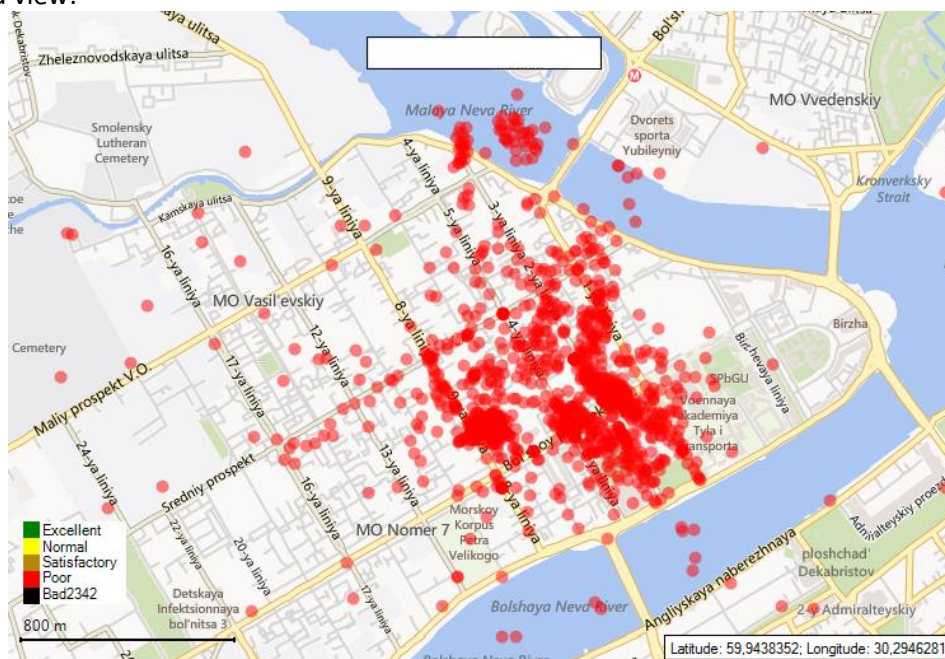
Note: Check your license supports Coverage Map feature.

RSSI - received signal strength indicator. Measures radio signal loss from one map point to another. RSSI map can be used by radio systems engineers to plan further radio network extension.

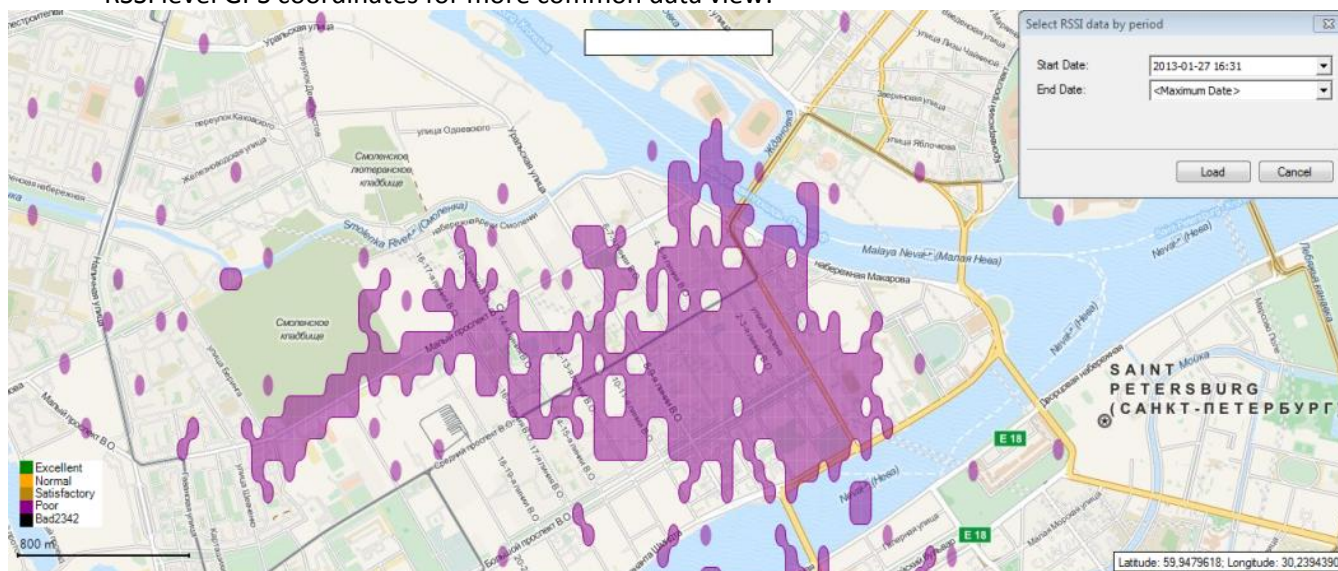
Go to Coverage Map tab to set signal strength levels (RSSI) displaying on map:



- **Draw in Dots** – select to display RSSI level on map as dots that represent coordinates points for more detailed view:



- **Draw Coverage Zone** – select to configure RSSI zone in meters and display on map averaging data of RSSI level GPS coordinates for more common data view:



Click  button to add new RSSI level.

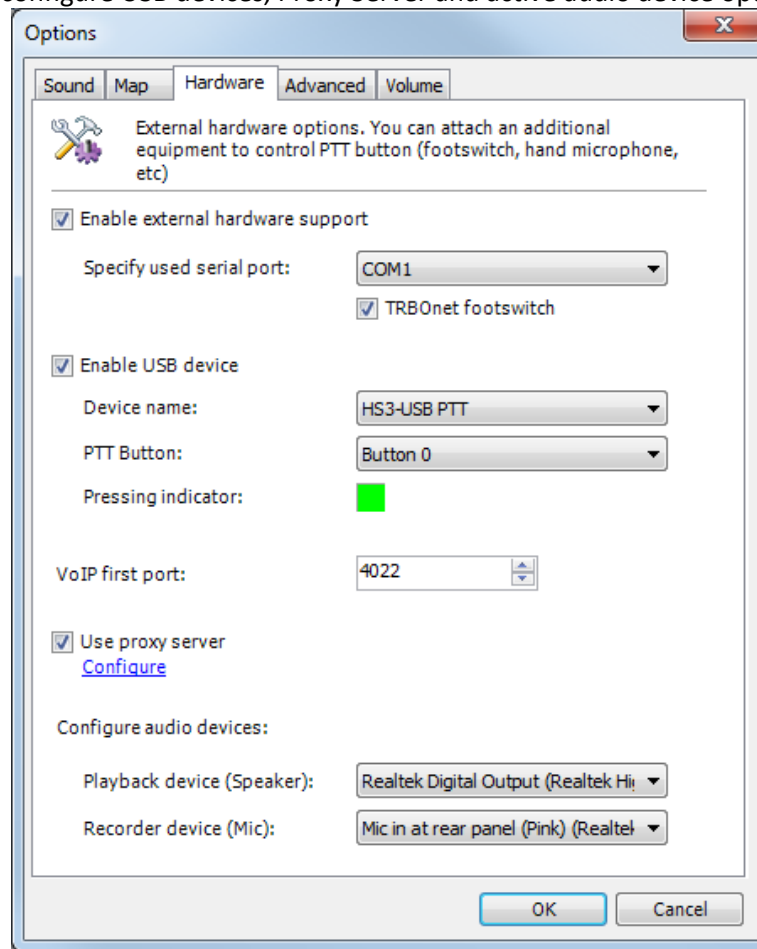
Set RSSI level parameters:

- **Value** – set the minimum level for the signal range (e.g., -65 means -65 and higher);
- **Description** – input level name to display in the system;
- **Color** – click to select color for RSSI indication on map.

To view RSSI levels on map go to GPS Positioning page and enable «**Coverage Map**» on Map Tools panel:
 Set **Start Date** and **End Date** to receive RSSI data.

Hardware

Go to **Hardware** tab to configure USB devices, Proxy Server and active audio device options:



Enable external hardware support – select to use external hardware devices, e.g. cable connectors. Specify free serial port on the PC for hardware devices.

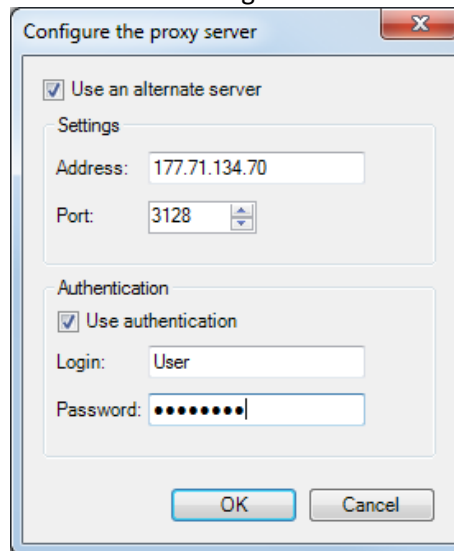
- **TRBOnet footswitch** – select to enable TRBOnet footswitch.

Enable USB device – check to enable USB devices (e.g. USB connected microphones).

Connect a microphone to PC via USB device. Go to **Tools , Options , Hardware**. Check Enable USB Device.

- **Device name** – select microphone name in the dropdown list;
- **PTT button** – all available PTT buttons are represented in the dropdown list. Select PTT button in the dropdown list and Press the PTT button on the microphone. When microphone PTT and PTT button in Dispatch Console are set up correctly, Pressing Indicator becomes green.
- **VoIP first port** - port for audio communication. Specify VoIP first port (4022 set by default). Each additional Dispatch Console will create connection to next port;

Use proxy server – select to enable Proxy Sever service in TRBOnet Dispatch Software to access Internet.
 Click «**Configure**» button to set the alternative server settings:



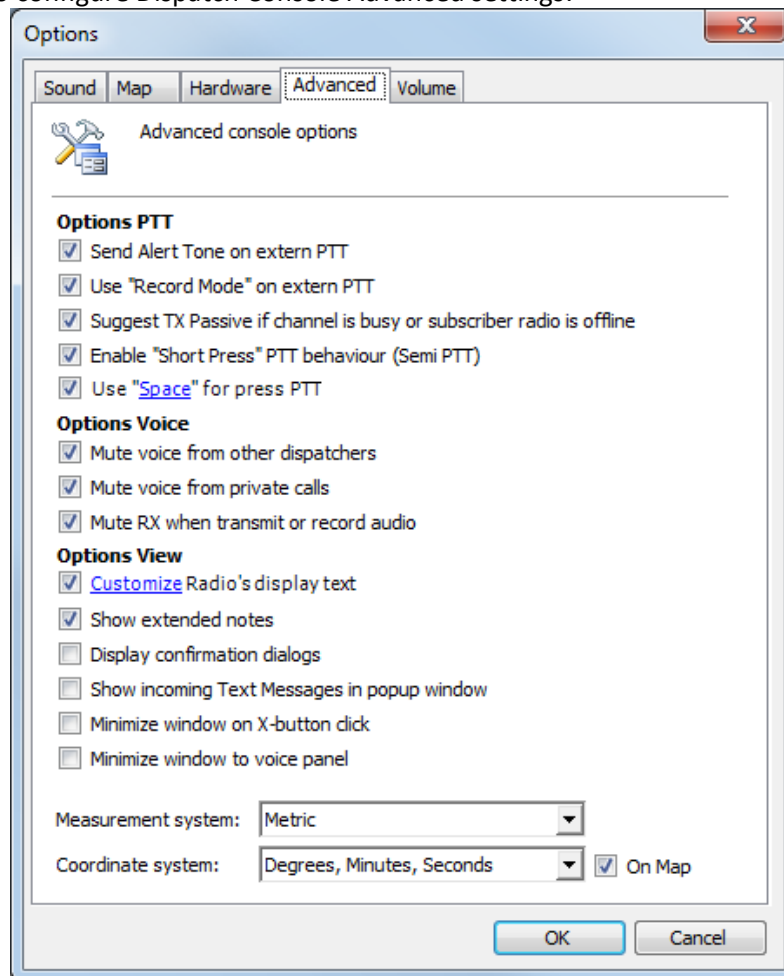
- **Use an alternate server** – select to enable a proxy server;
- **Settings** – specify the alternate server address and port;
- **Authentication**
- **Use authentication** – select to use individual login and password to connect to the alternate server.
 Click «**OK**» to add the proxy server.

Configure audio devices

- **Playback device** - select the audio device for to play incoming voice messages and playback voice recordings in Dispatch Console;
- **Recorder device** - select the recording device where the microphone is connected.

Advanced

Go to **Advanced** Tab to configure Dispatch Console Advanced settings:



Options PTT

- **Send Alert Tone on extern PTT** – select to enable Alert Tone for all subscribers on a channel when Dispatcher presses PTT button;
- **Use «Record Mode» on extern PTT** – check to record all voice transmissions from external PTT devices (palm mics, Footswitches etc.)
- **Suggest TX Passive if channel is busy or subscriber radio is offline** – select to record a TX Passive Voice Message for a Radio channel is busy or subscriber is offline (see TX Passive configuration page);
- **Enable «Short Press» PTT behavior (Semi PTT)** – select to start and finish Voice Calls by short PTT pressing instead of keeping PTT pressed during the whole Voice Call;
- **Use «Space» for press PTT** – select to set a key for press PTT. Click «**Space**» button to set a key. When the informational message appears press any key on the keyboard to set it as PTT.

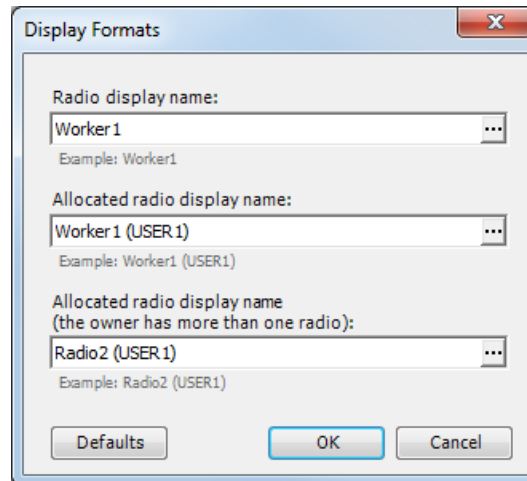
Options Voice

- **Mute voice from other Dispatchers** – select to mute all other Dispatchers' voice transmissions;
- **Mute voice from Private Calls** – select to mute all Private Calls on the channel;
- **Mute RX when transmit or record audio** – select to mute all Voice Notifications when Dispatcher transmits or records audio.

Options View

- **Customize Radio display text** – select to set a custom alias for Radio in the list of subscribers.

Click «**Customize**» button:




The dialog box titled "Display Formats" contains three text input fields, each with an "Example:" label below it and a "..." button to the right of the input field.

- Radio display name:** The input field contains "Worker 1". The example below is "Worker1".
- Allocated radio display name:** The input field contains "Worker 1 (USER 1)". The example below is "Worker1 (USER1)".
- Allocated radio display name (the owner has more than one radio):** The input field contains "Radio2 (USER 1)". The example below is "Radio2 (USER1)".

At the bottom of the dialog box are three buttons: "Defaults", "OK", and "Cancel".

- ✓ **Radio display name** – specify a custom alias for selected radio;
- ✓ **Allocated radio display name** - specify a custom alias for selected radio in Allocation Console;
- ✓ **Allocated radio display name (the owner has more than one radio)** - specify a custom alias for selected radio in Allocation Console in case when user has more than one radio.

Click  button to add more information about Radio:

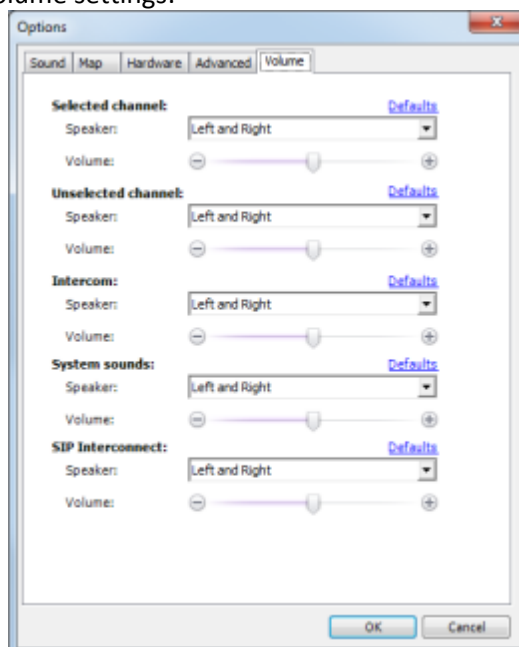
- ✓ **Radio Callsign** – select to add a Radio Callsign;
- ✓ **Radio Owner name** – select to add an Owner name;
- ✓ **Radio ID** – select to add radio ID data;
- ✓ **Active Channel** – select to add an Active Channel for Radio.

Click «**Default**» button to set default settings for Radio Display.

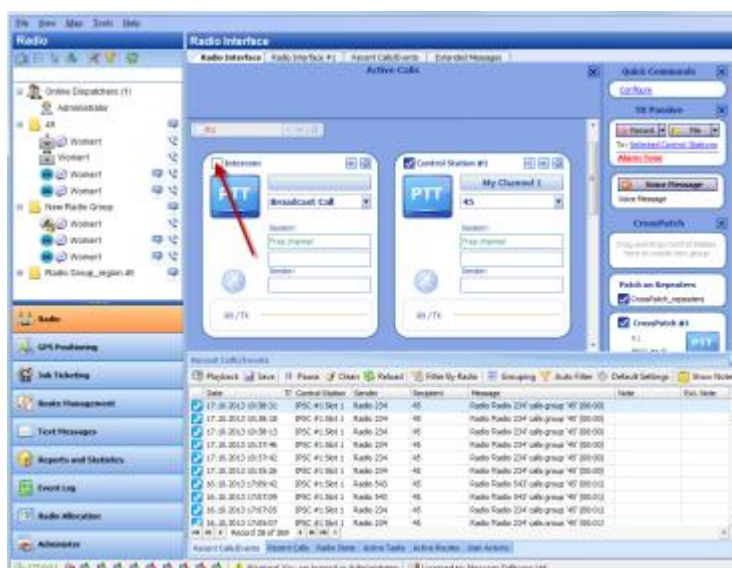
- **Show extended nodes** – select to enable extended nodes in the Dispatch Console;
- **Display confirmation dialogs** – select to enable dialogs to confirm Dispatcher actions with Confirmation dialogs required (e.g. send configured Voice Message from Dispatch Console);
- **Show incoming Text Messages in popup window** – select to optimize incoming Text Messages view;
- **Minimize window on X-button click** – select to use X-button to minimize Dispatch Console;
- **Measurement system** – select Metric or American measurement system in the dropdown list.
- **Coordinate system** – select coordinate system in the dropdown list. **On Map** – select to display coordinates on the map.

Volume

Go to **Volume** Tab to configure Volume settings:



- Customize **selected channel** speakers and volume parameters;
- Customize **unselected channel** speakers and volume parameters. This option is intended for radio channels which are not selected in Dispatch Console. See the screenshot below:



- Customize **Intercom** speakers and volume parameters. This option is intended for **Intercom** Voice session between Dispatchers;
- Customize **system sounds** speakers and volume parameters ;

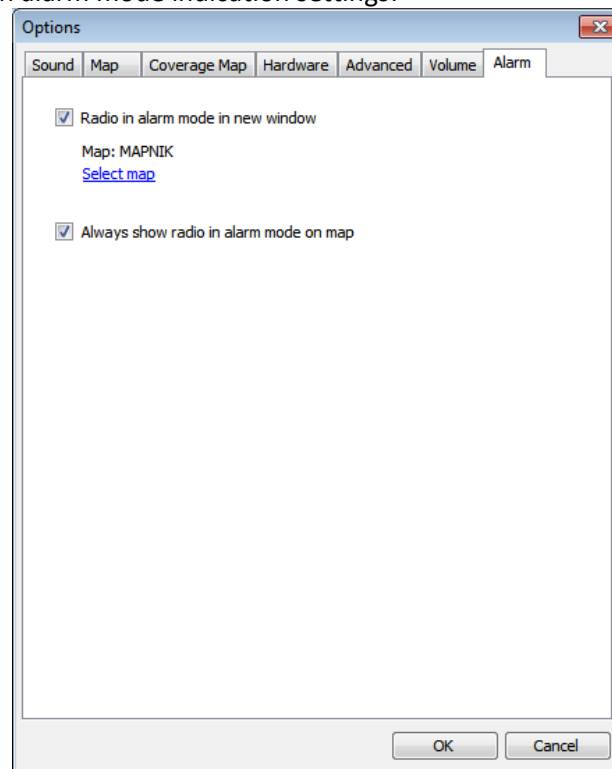
To see the list of system sounds go to **Tools , Options , Sound** Tab.

- Customize **SIP Interconnect** speakers and volume parameters. This option is intended for SIP calls;

Click «**Default**» button to reset settings to defaults.

Alarm

Go to **Alarm** tab to set radio in alarm mode indication settings:

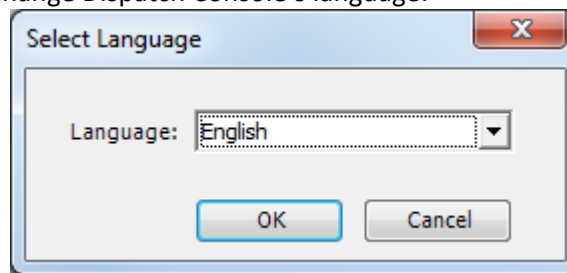


Radio in alarm mode in new window – select to display radio in alarm mode centrally on the selected map type. Click «**Select Map**» button to use online or offline map for radio displaying. For more details on supported maps, see [Map Types](#) section.

Click «**OK**» to save modified Dispatch Console options.

Set Language

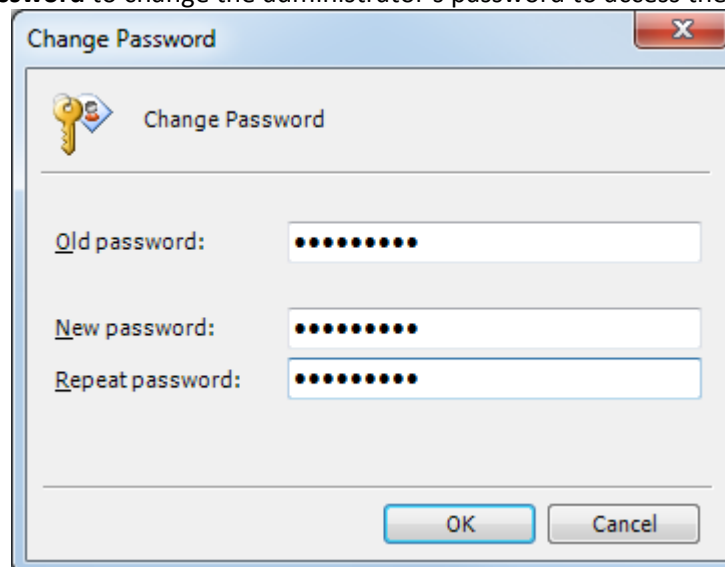
Select **Tools** , **Set Language** to change Dispatch Console's language:



Select language in the dropdown list and click «**OK**».
The changes will apply with the next launch of console.

Change Password

Select **Tools** , **Change Password** to change the administrator's password to access the Dispatch Console:



Type in old Password.
Type in New Password and then confirm it in the field below.
Click «**OK**» to change the password.

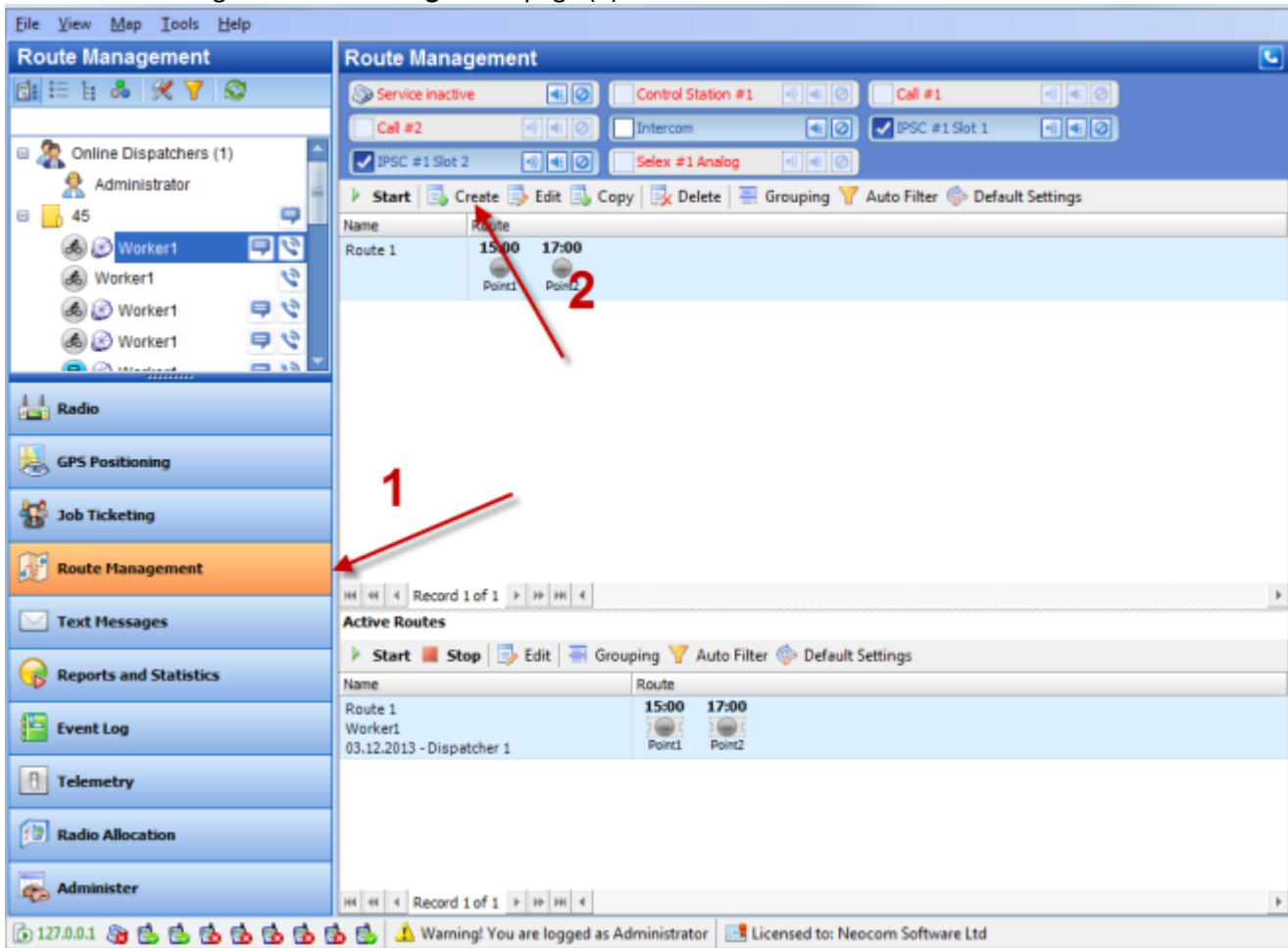
Help

Send feedback – click to see Neocom Software, Ltd. Contact details.

About – click to see your TRBOnet Dispatch Software info.

Route Management

Route Management feature allows create routs and assign to selected radio subscribers or dispatchers.
 To create a route go to **Route Management** page (1):



Route Management

Service inactive | Control Station #1 | Call #1

Call #2 | Intercom | IPSC #1 Slot 1

IPSC #1 Slot 2 | Selex #1 Analog

Start | Create | Edit | Copy | Delete | Grouping | Auto Filter | Default Settings

Name	Route
Route 1	15:00 17:00 Point1 Point2

Record 1 of 1

Active Routes

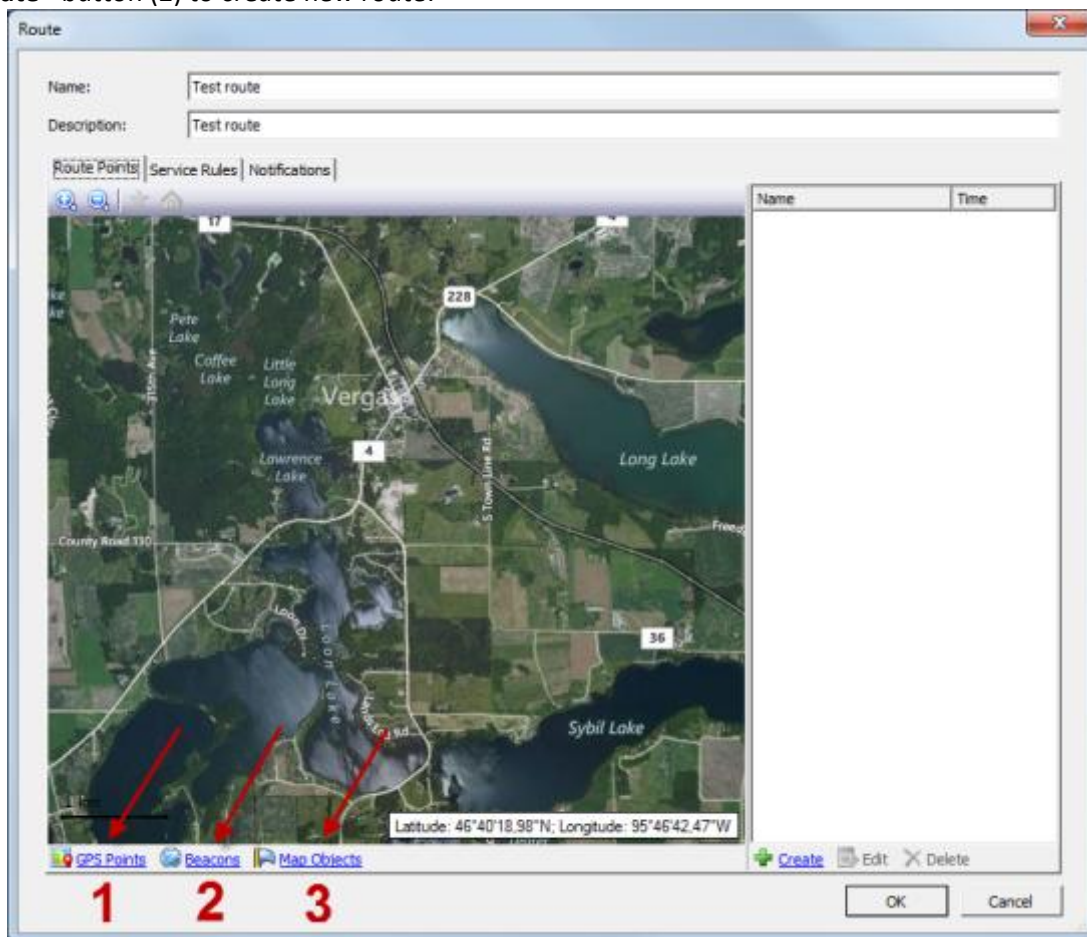
Start | Stop | Edit | Grouping | Auto Filter | Default Settings

Name	Route
Route 1	15:00 17:00
Worker1	Point1 Point2
03.12.2013 - Dispatcher 1	

Record 1 of 1

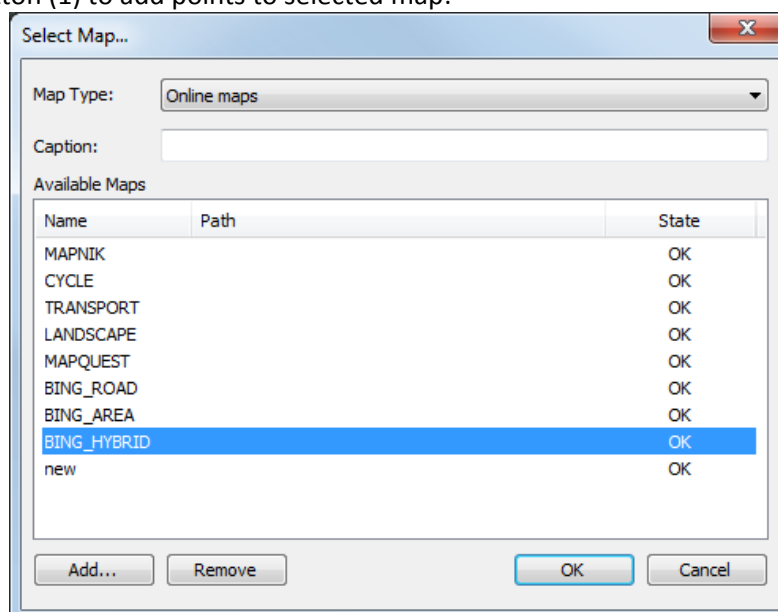
Warning! You are logged as Administrator | Licensed to: Neocom Software Ltd

Click «**Create**» button (2) to create new route:



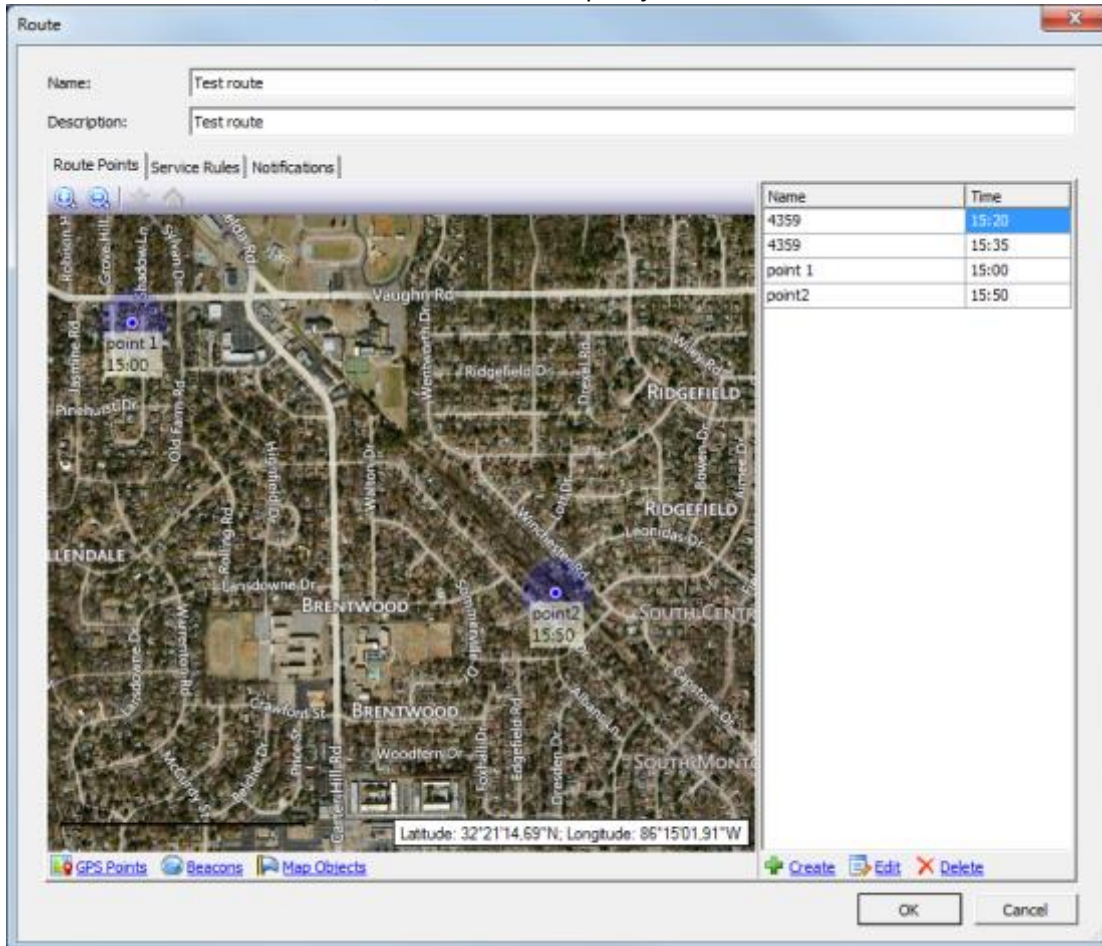
- **Name** – specify a name to display in the route list;
- **Description** – add a description for new route.

Click «**GPS Points**» button (1) to add points to selected map:



Select map. For more details on map types see [Map Types](#) section.

Go to **Route Points** tab to set GPS Points, Beacons and Map Objects:



Click «**Create**» button or double-click selected point on the map to create new route point:

Point properties

Name:

Location:

Radius: meters

Time:

Time delta: minutes

- **Name** – specify a name for new point to display on the map;
- **Location** – in the location field administrator can see current GPS coordinates of new point;
- **Radius** – specify radius to display new point on the map;
- **Time** – specify time to service new point;
- **Time delta** – time inaccuracy to serve selected point.

Click «**OK**» to add new point.

Click «**Beacons**» (2) to add a beacon on the map.

Note: to enable **Indoor** feature make sure your license includes **Indoor Positioning** (see [License Information](#) page) and **Indoor Service** is selected in the list of available services (see [Services](#) page).

Route

Name: Test route

Description: Test route

Route Points

Service Rules

Notifications

4359

Name	Time
4359	15:20
4359	15:35
point 1	15:00
point2	15:50

GPS Points

Beacons

Map Objects

Create

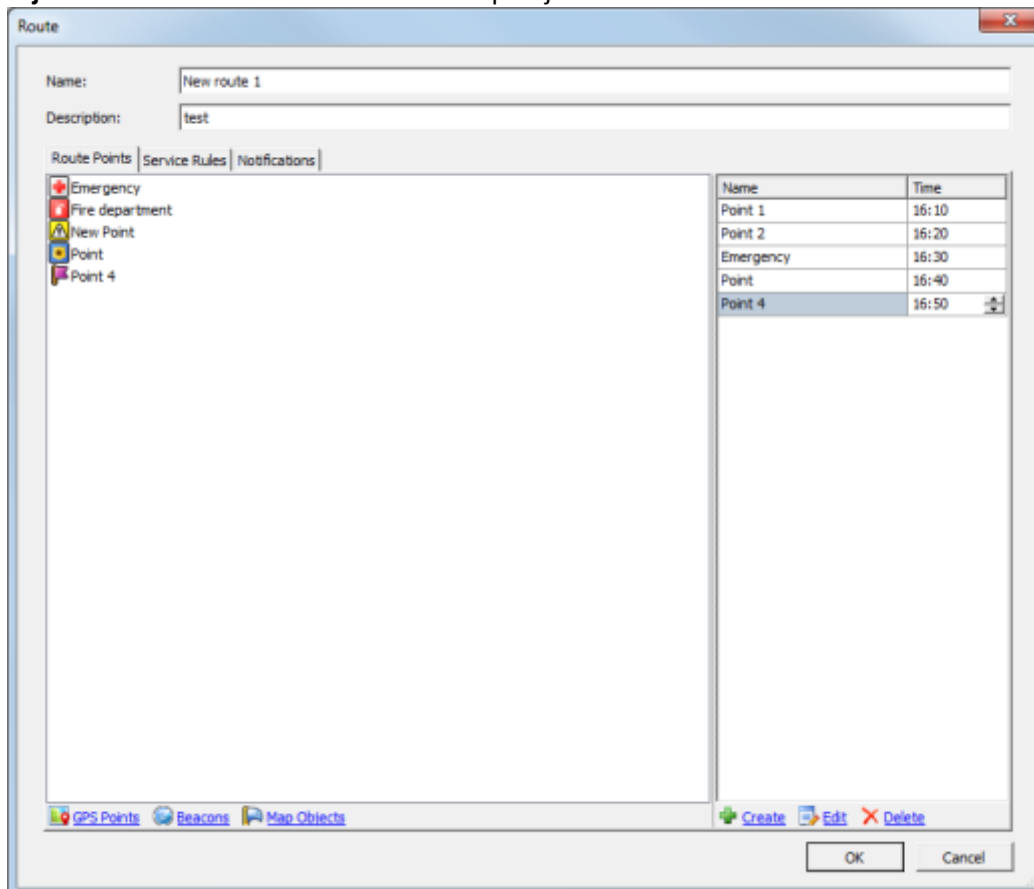
Edit

Delete

OK

Cancel

Click «**Map Objects**» button to download created map objects list:

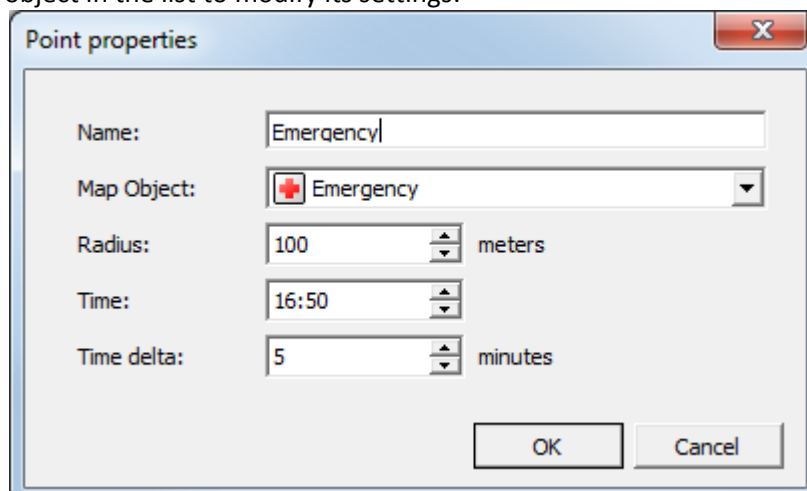


The 'Route' dialog box has tabs for 'Route Points', 'Service Rules', and 'Notifications'. The 'Route Points' tab is active, showing a list of map objects on the left and a table on the right.

Name	Time
Point 1	16:10
Point 2	16:20
Emergency	16:30
Point	16:40
Point 4	16:50

At the bottom, there are buttons for 'GPS Points', 'Beacons', 'Map Objects', 'Create', 'Edit', 'Delete', 'OK', and 'Cancel'.

Double-click selected object in the list to modify its settings:



The 'Point properties' dialog box contains the following fields:

- Name:** Emergency
- Map Object:** Emergency (selected from a dropdown menu)
- Radius:** 100 meters
- Time:** 16:50
- Time delta:** 5 minutes

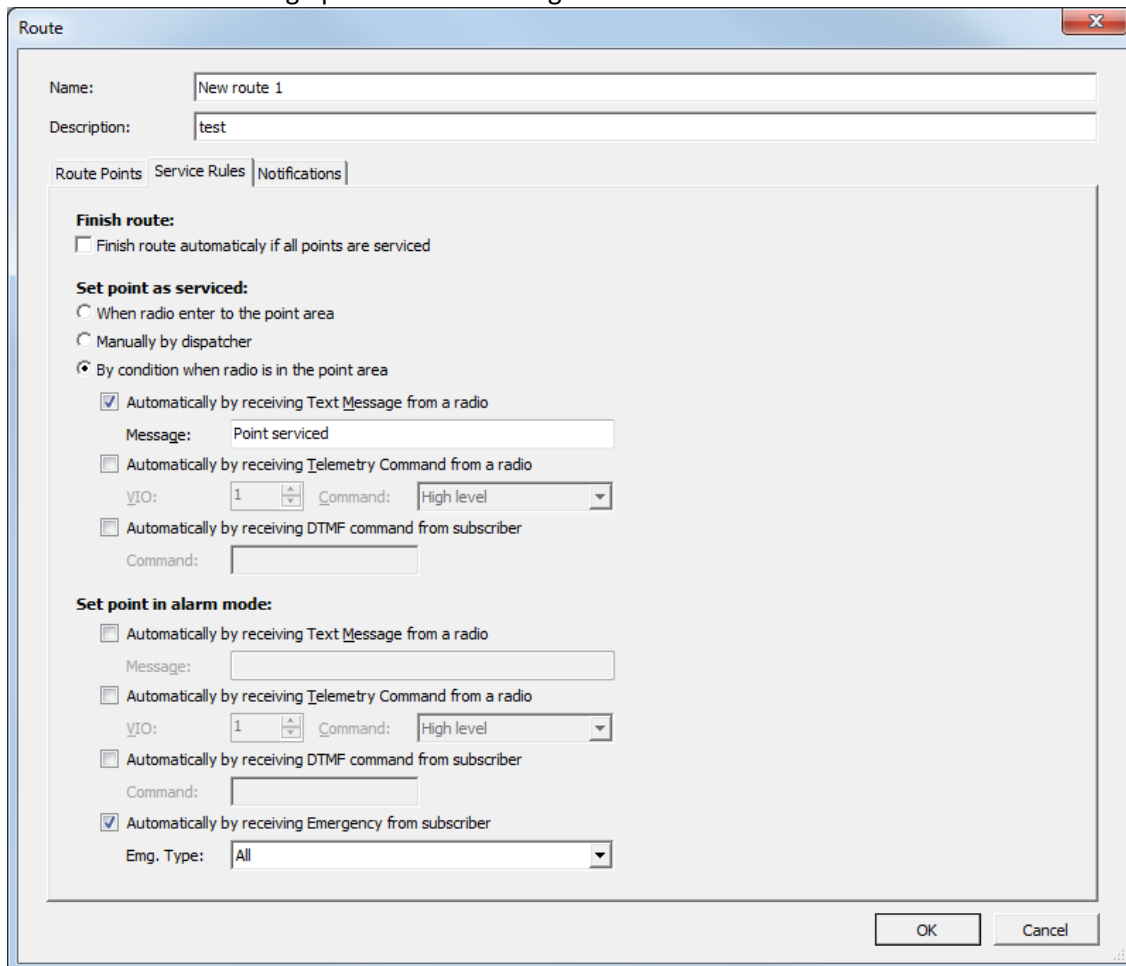
Buttons for 'OK' and 'Cancel' are at the bottom right.

- **Name** – specify a name for the object;
- **Map Object** – select map object icon (type) in the dropdown list;
- **Radius** – specify radius to display the point on the map;
- **Time** – specify time to service the point;
- **Time delta** – time inaccuracy to serve selected point.

Click «**OK**» to save map object parameters.

All map objects are displayed as points on the map.

Go to **Service Rules** tab to manage point service settings:



Finish route – specify parameters to mark the route as finished:

- **Finish route automatically if all points are serviced** – select to mark the route as finished when all points and objects are serviced.

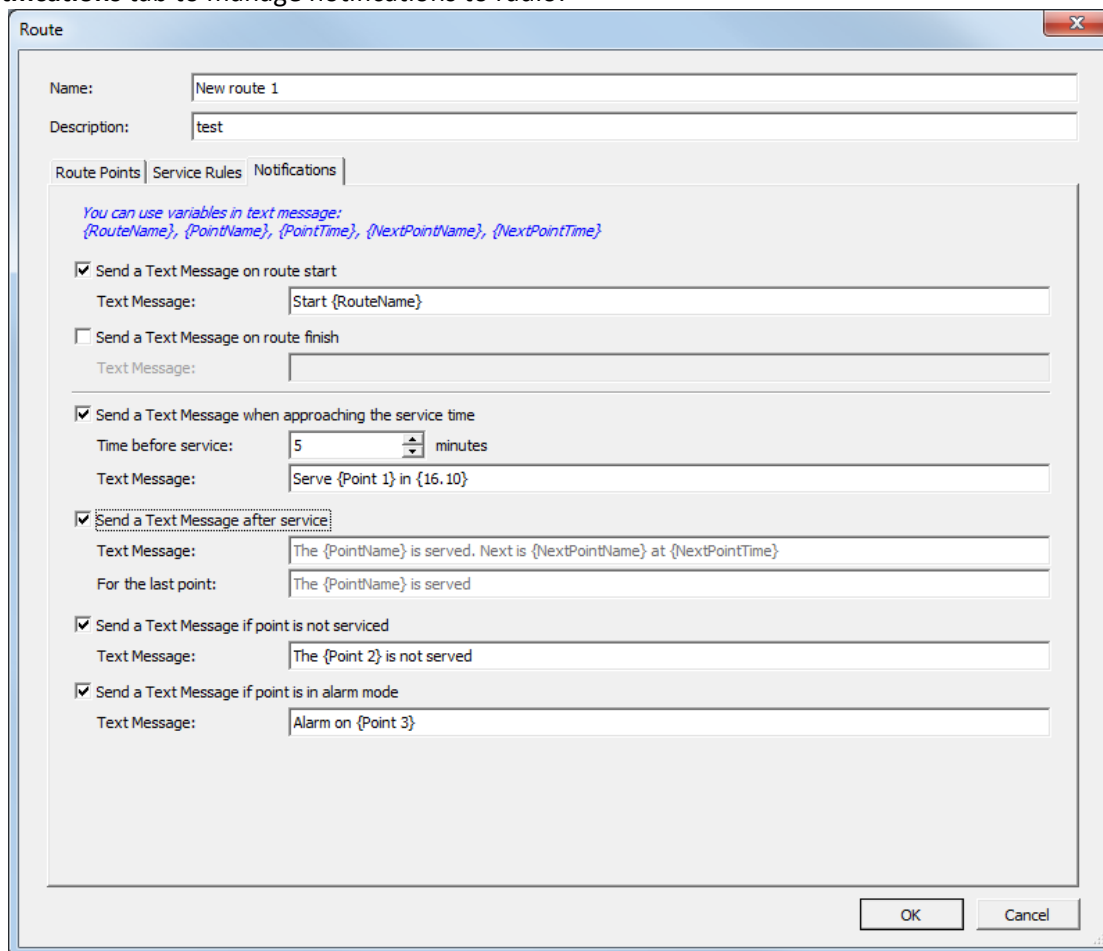
Set point as serviced – select point service parameters:

- **When radio enters to the point area** – select to mark point as serviced when radio becomes in the point radius;
- **Manually by dispatcher** – select to allow dispatcher make point as serviced;
- **By condition when radio is in the point area** – specify conditions to mark point as serviced:
 - ✓ **Automatically by receiving Text Message from a radio** - select to mark the point serviced after dispatcher receives text message with specified text from radio subscriber;
Message – specify message text;
 - ✓ **Automatically by receiving Telemetry Command from a radio** - select to mark the point serviced after dispatcher receives specified telemetry command from radio subscriber;
VIO – specify a VIO to send a telemetry command;
Command – specify a command for selected VIO;
 - ✓ **Automatically by receiving DTMF command from subscriber** – select to mark the point as serviced after dispatcher receives DTMF command from radio subscriber;
Command – specify a command text.

Set point in alarm mode – select parameters to make the point in alarm mode:

- **Automatically by receiving Text Message from a radio** - select to make the point in alarm mode after dispatcher receives text message with specified text from radio subscriber;
 - ✓ **Message** – specify message text;
- **Automatically by receiving Telemetry Command from a radio** - select to make the point in alarm mode after dispatcher receives specified telemetry command from radio subscriber;
 - ✓ **VIO** – specify a VIO to send a telemetry command;
 - ✓ **Command** – specify a command for selected VIO;
- **Automatically by receiving DTMF command from subscriber** – select to make the point in alarm mode after dispatcher receives DTMF command from radio subscriber;
 - ✓ **Command** – specify a command text;
- **Automatically by receiving Emergency from subscriber** – select to make the point in alarm mode after dispatcher receives Emergency from radio subscriber;
 - ✓ **Emg. Type** – specify an Emergency type in the dropdown list;

Go to **Notifications** tab to manage notifications to radio:

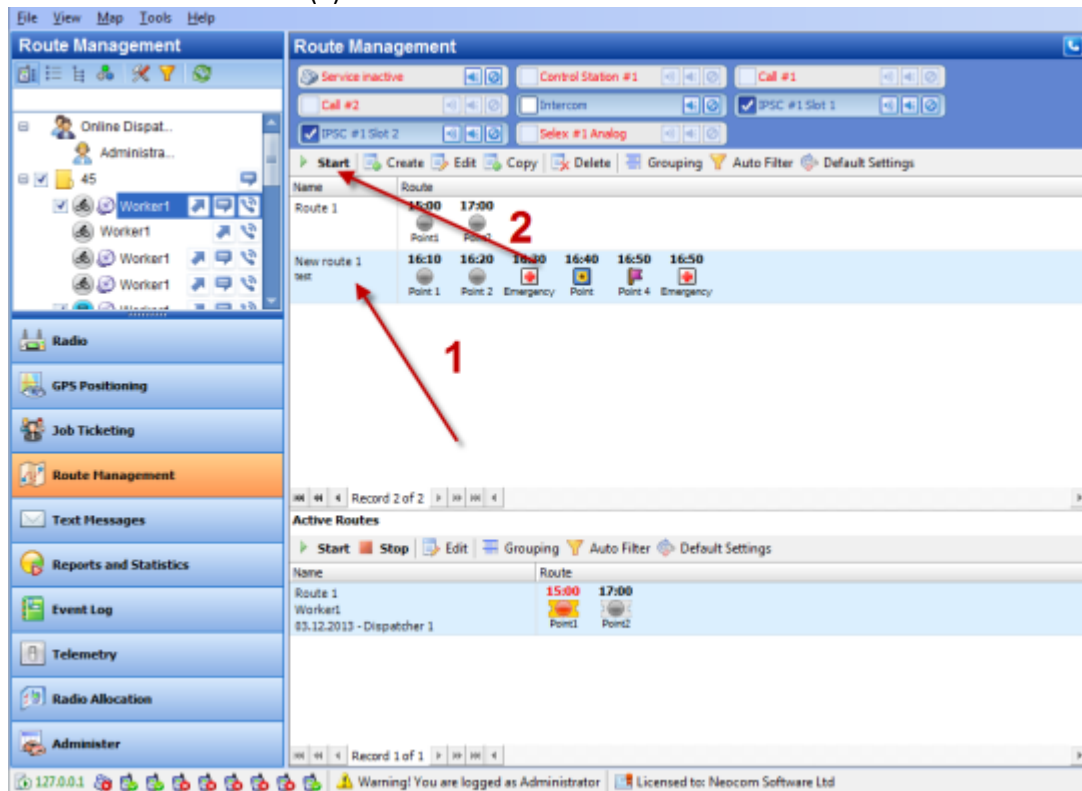


Note: follow the predefined notifications templates. If text is not correct notifications will not be available.

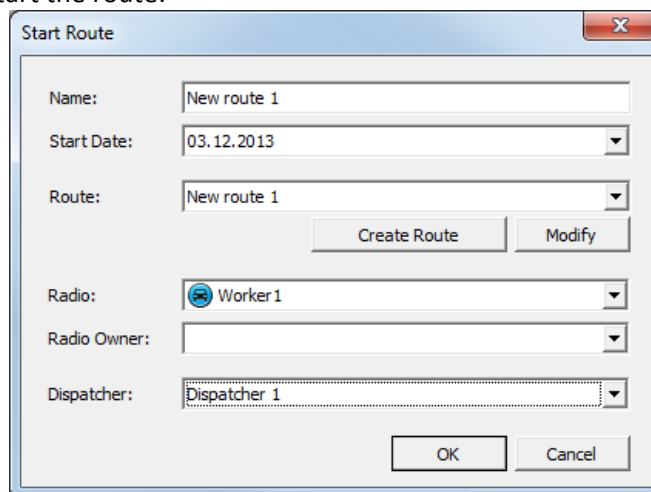
- **Send a Text Message on a route start** – select to inform radio subscriber about route start;
 - ✓ **Text Message** – type in text message text to send to radio subscriber;
- **Send a Text Message on a route finish** – select to inform radio subscriber about route finish;
 - ✓ **Text Message** – type in text message text to send to radio subscriber;
- **Send a Text Message when approaching the service time** – select to notify radio subscriber about point serve;
 - ✓ **Time before service** – specify a time period in minutes before service time to send a text message;
 - ✓ **Text Message** – type in text message text to send to radio subscriber;
- **Send a Text Message if point is not serviced** – select to notify radio subscriber if the point is not serviced;
 - ✓ **Text Message** – type in text message text to send to radio subscriber;
- **Send a Text Message if point is in alarm mode** - select to notify radio subscriber if the point is in alarm mode;
 - ✓ **Text Message** – type in text message text to send to radio subscriber;

Click «**OK**» to save settings.

New route is added in the route list (1):



Click «Start» button (2) to start the route:

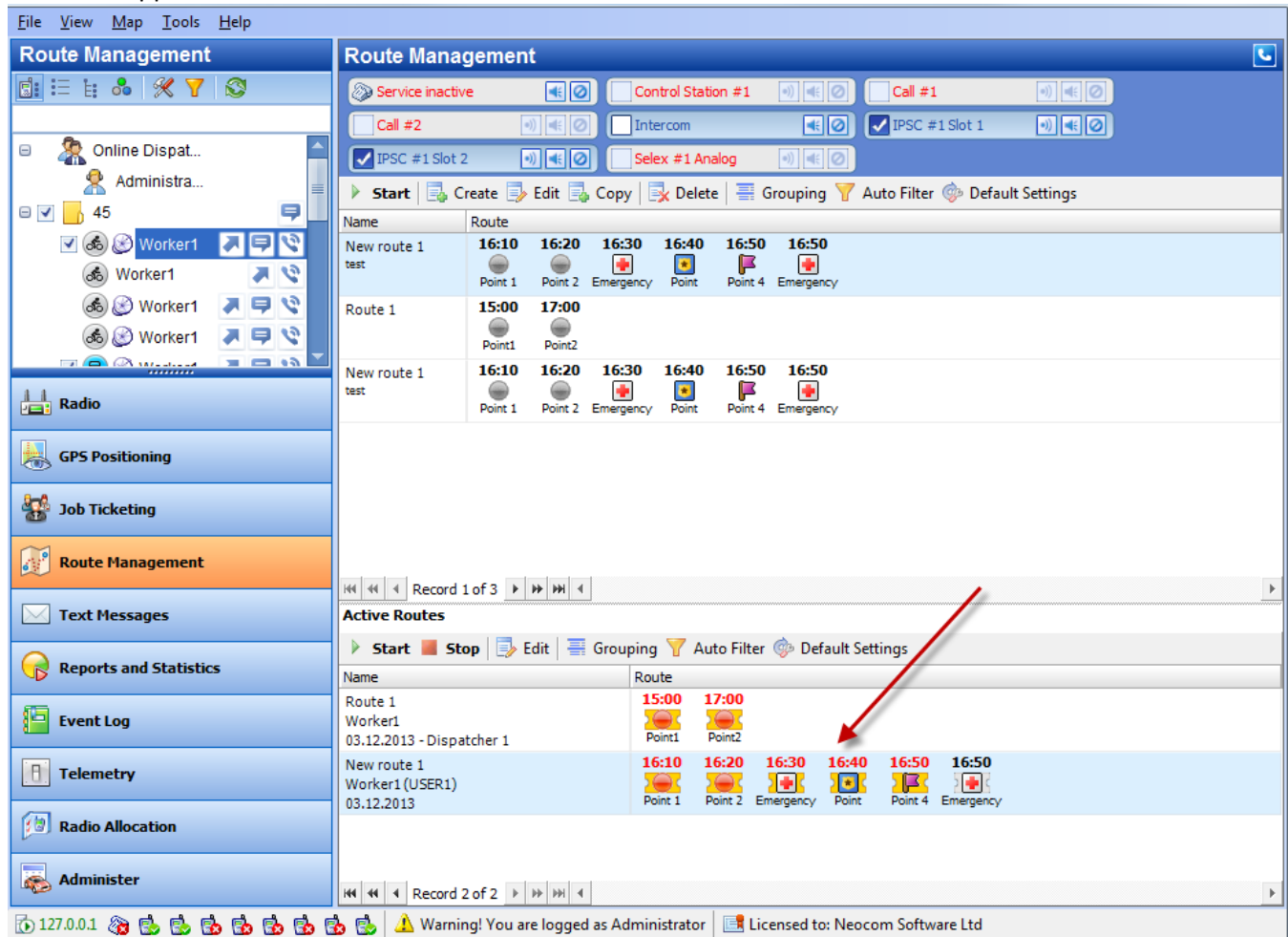


- **Name** – specify a name for Active route;
- **Start Date** – select a date to start the route;
- **Route** – select route to start in the dropdown list. Click «**Create Route**» button to create new route based on selected route. Click «**Modify**» button to modify selected route parameters.
- **Radio** – select Radio to assign the route;
- **Radio Owner** select [Users](#) to assign the route;
- **Dispatcher** – select a Dispatcher to monitor the route.

Note: do not select both: **Radio** and **Radio Owner** to prevent incorrect route running.

Click «OK» to start a route.

The route appears in the **Active Routes** list:



The screenshot shows the Neocom software interface. On the left is a sidebar with navigation options: Online Dispat..., Administra..., 45, Worker1, Worker1, Worker1, Worker1, Radio, GPS Positioning, Job Ticketing, Route Management (highlighted), Text Messages, Reports and Statistics, Event Log, Telemetry, Radio Allocation, and Administer. The main window is titled 'Route Management' and contains a 'Service inactive' section with various controls like 'Control Station #1', 'Call #1', 'Call #2', 'Intercom', 'IPSC #1 Slot 1', 'IPSC #1 Slot 2', and 'Selex #1 Analog'. Below this is a table of routes. The 'Active Routes' section is highlighted, showing a list of routes with their status and times. A red arrow points to the '16:40' time slot in the 'Active Routes' table.

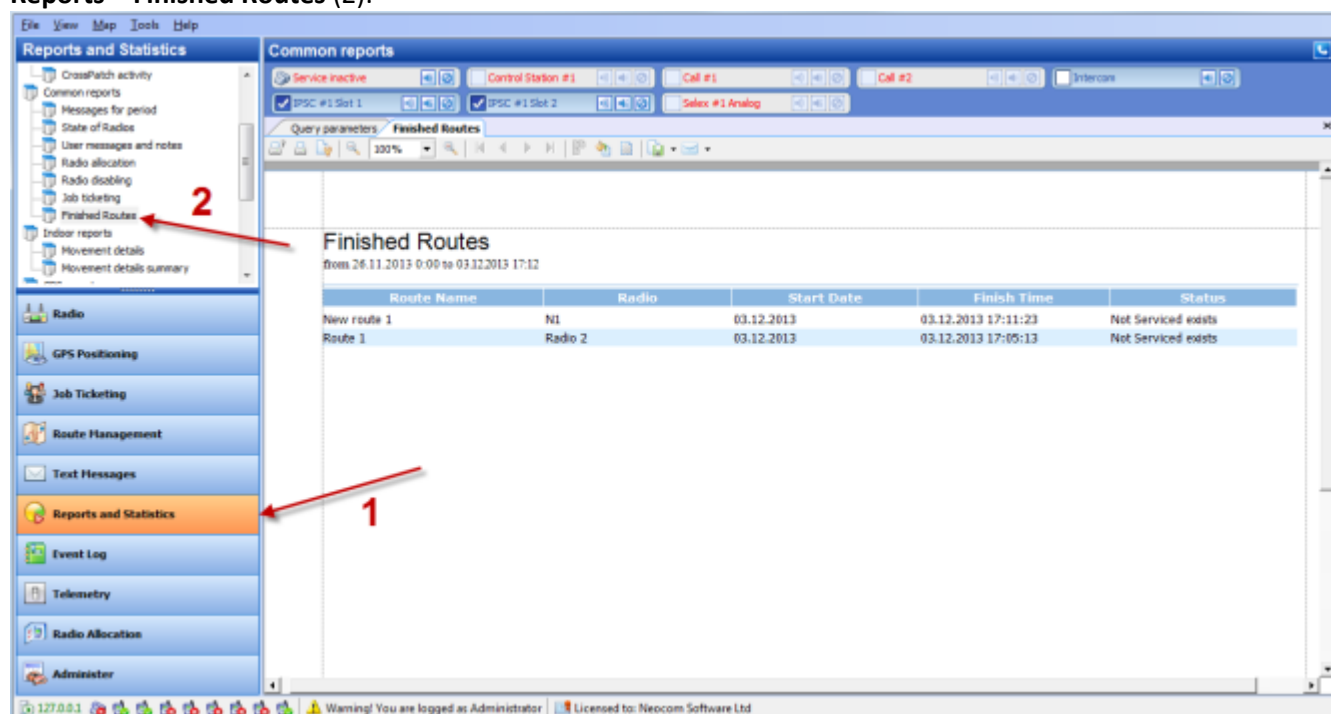
Name	Route	16:10	16:20	16:30	16:40	16:50	16:50
New route 1 test	Point 1	Point 2	Emergency	Point	Point 4	Emergency	
Route 1	Point1	Point2					
New route 1 test	Point 1	Point 2	Emergency	Point	Point 4	Emergency	

Name	Route	15:00	17:00	16:10	16:20	16:30	16:40	16:50	16:50
Route 1	Worker1	Point1	Point2						
03.12.2013 - Dispatcher 1									
New route 1	Worker1 (USER1)	Point 1	Point 2	Emergency	Point	Point 4	Emergency		
03.12.2013									

If the point is not served, it becomes red.

Click «**Stop**» button to replace active route in the Created routes list.

Administrator can see reports of finished routes. Go to **Reports and Statistics** (1) page and select **Common Reports – Finished Routes** (2):



Finished Routes
 from 26.11.2013 0:00 to 03.12.2013 17:12

Route Name	Radio	Start Date	Finish Time	Status
New route 1	N1	03.12.2013	03.12.2013 17:11:23	Not Serviced exists
Route 1	Radio 2	03.12.2013	03.12.2013 17:05:13	Not Serviced exists

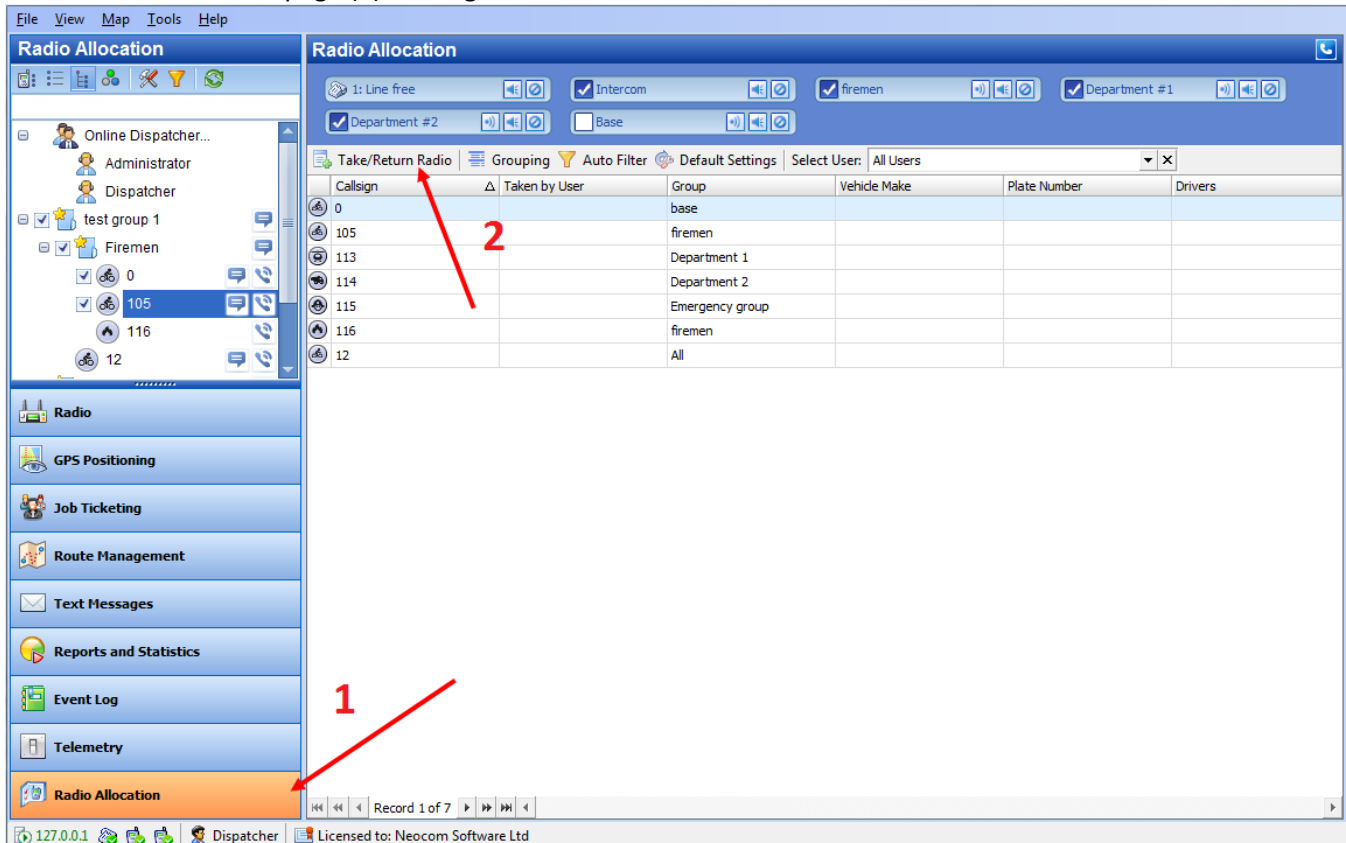
Warning! You are logged as Administrator | Licensed to: Neocom Software Ltd

Radio Allocation

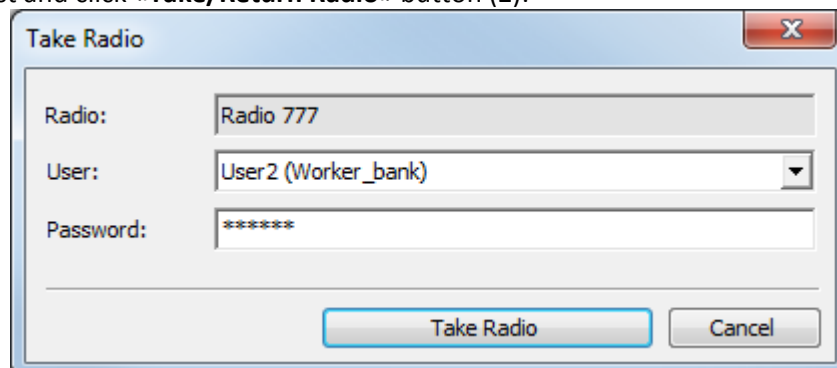
Selected radio can be assigned in the system to selected employee registered in the system.

All available radios are disabled and an employee will need to type in username and password to take and enable selected radio. When an employee returns allocated radio it gets disabled again.

Go to **Radio Allocation** page (1) to assign radios to users:



Select radio in the list and click «Take/Return Radio» button (2):

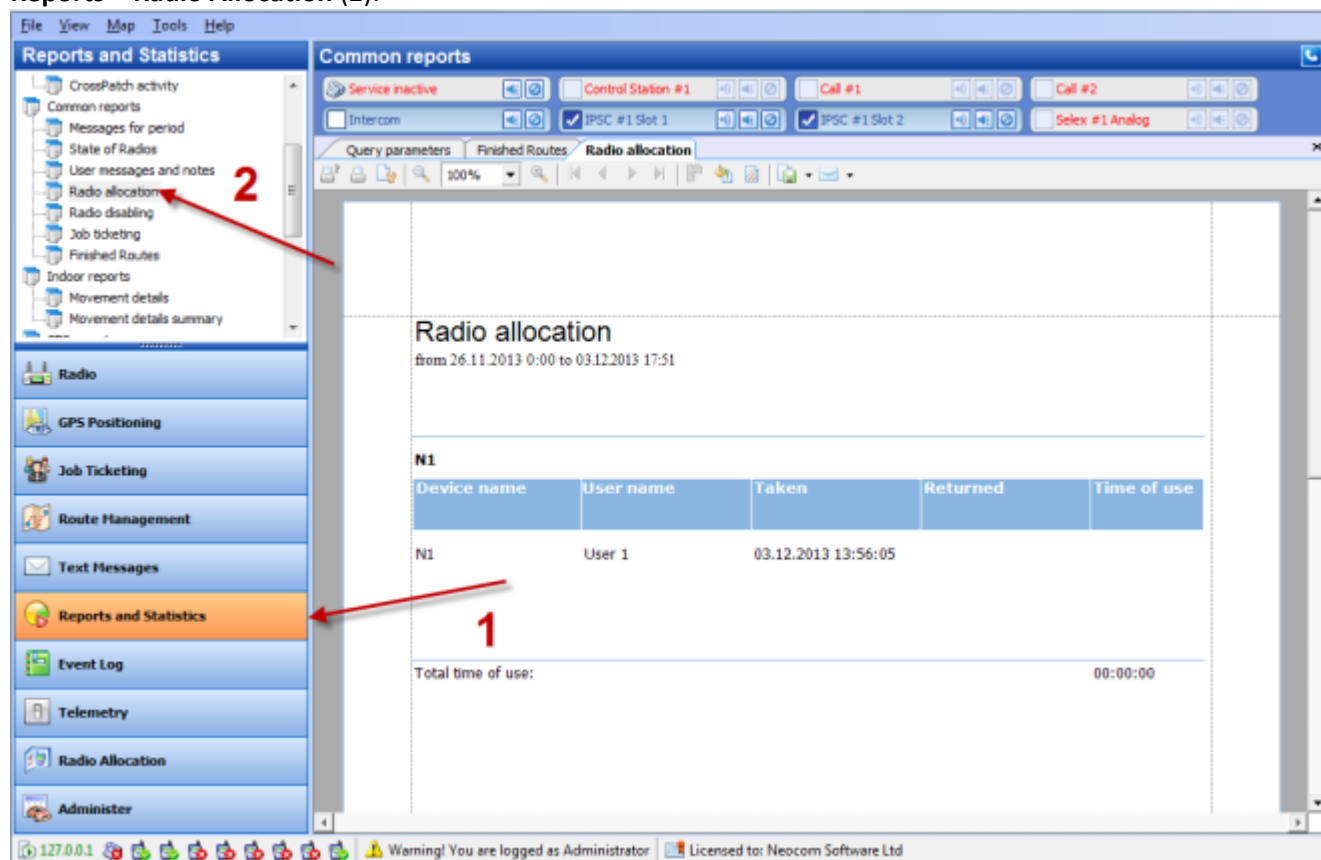


- **Radio** – select radio to allocate;
- **User** – select User to allocate the radio. User should type in Dispatch Console or on the radio keyboard;
- **Password** – User should type the password in Dispatch Console or on the radio keyboard.

Note: for more details on user access to Allocation Console see [Users](#) section.

Click «**Take Radio**» button to assign the radio to selected User.

Administrator can see reports of allocated radios. Go to **Reports and Statistics** (1) page and select **Common Reports – Radio Allocation** (2):



Radio allocation
 from 26.11.2013 0:00 to 03.12.2013 17:51

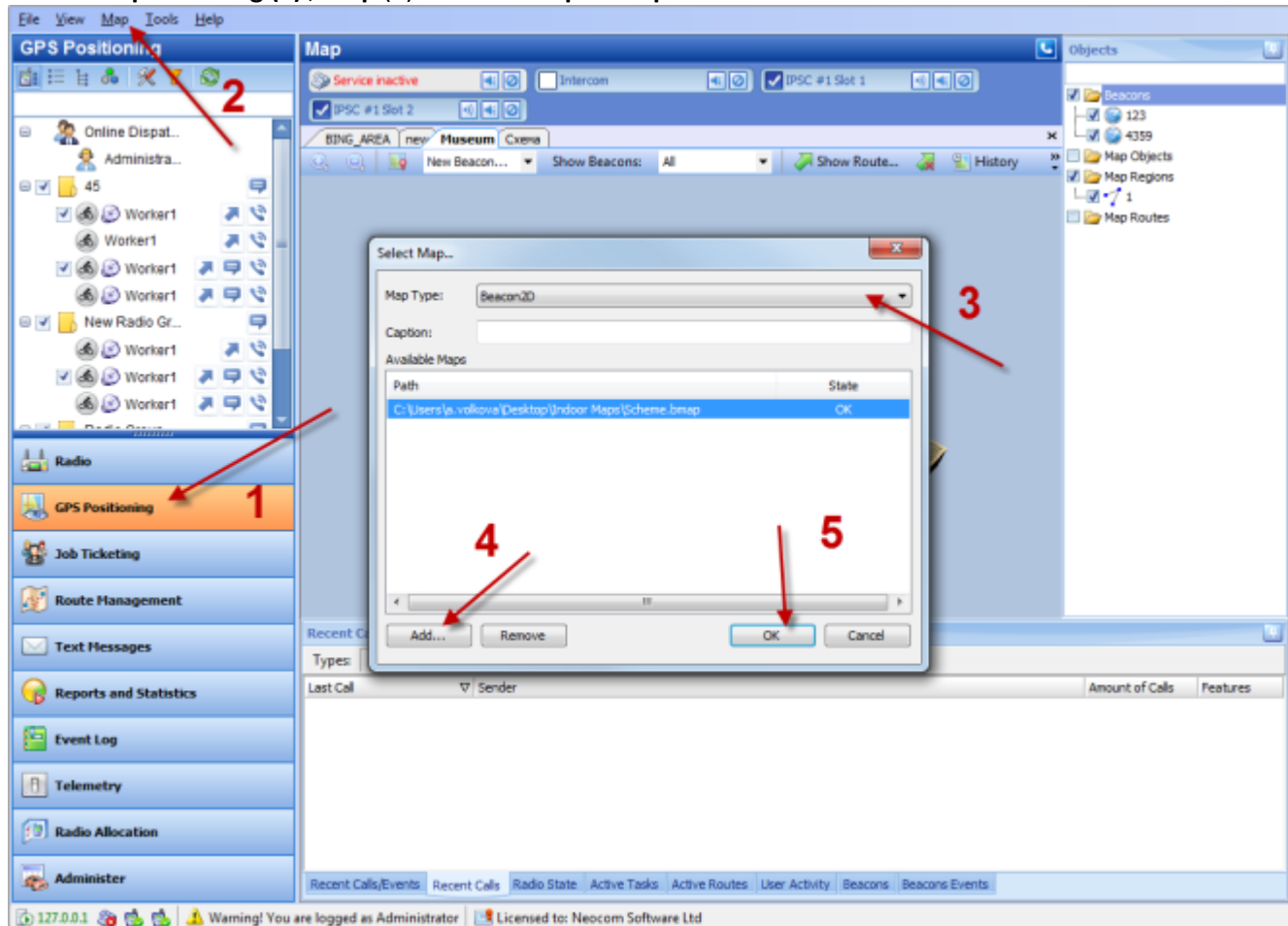
Device name	User name	Taken	Returned	Time of use
N1	User 1	03.12.2013 13:56:05		
Total time of use:				00:00:00

Beacons

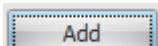
TRBOnet Dispatch Software provides the **Indoor Positioning** feature to monitor radio location inside building, where no GPS signal is available. The feature requires additional hardware (beacons spread around the building and option boards in radios). A subscriber will be displayed on indoor floor plan on exact beacon when the radio comes to the beacon's coverage area. The beacon icon on map notifies on the amount of radios that are currently in this beacon's coverage area (e.g. Room 1(3) - there are 3 radios in Room 1).

Note: to enable **Indoor** feature make sure your license includes **Indoor Positioning** (see [License Information](#) page) and **Indoor Service** is selected in the list of available services (see [Services](#) page).

Go to **GPS positioning (1)** , **Map (2)** and select **Open map in tab:**

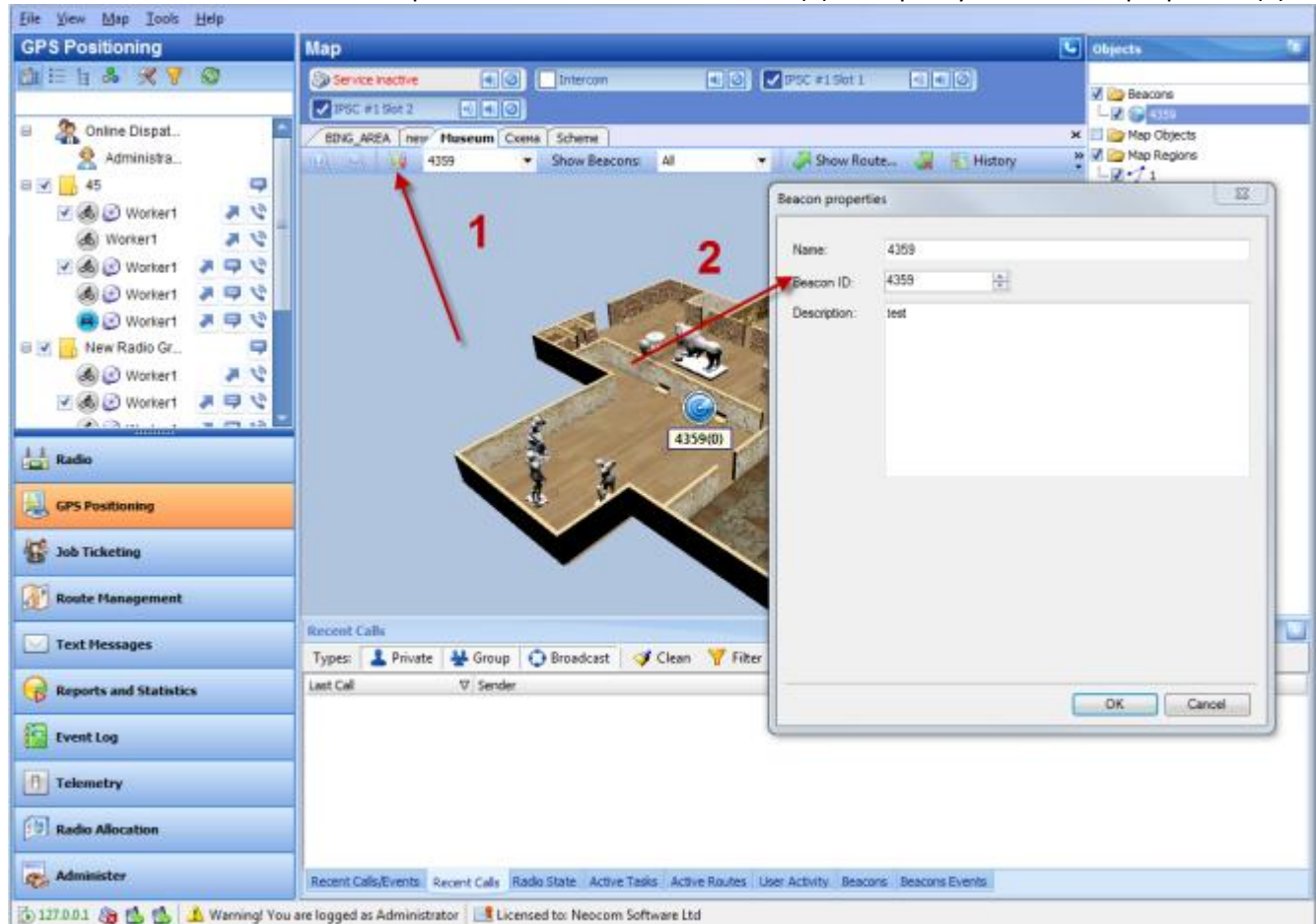


- **Map Type** – select Beacon 2D to enable 2D floor plan or Beacon 3D to enable 3D floor plan (3);



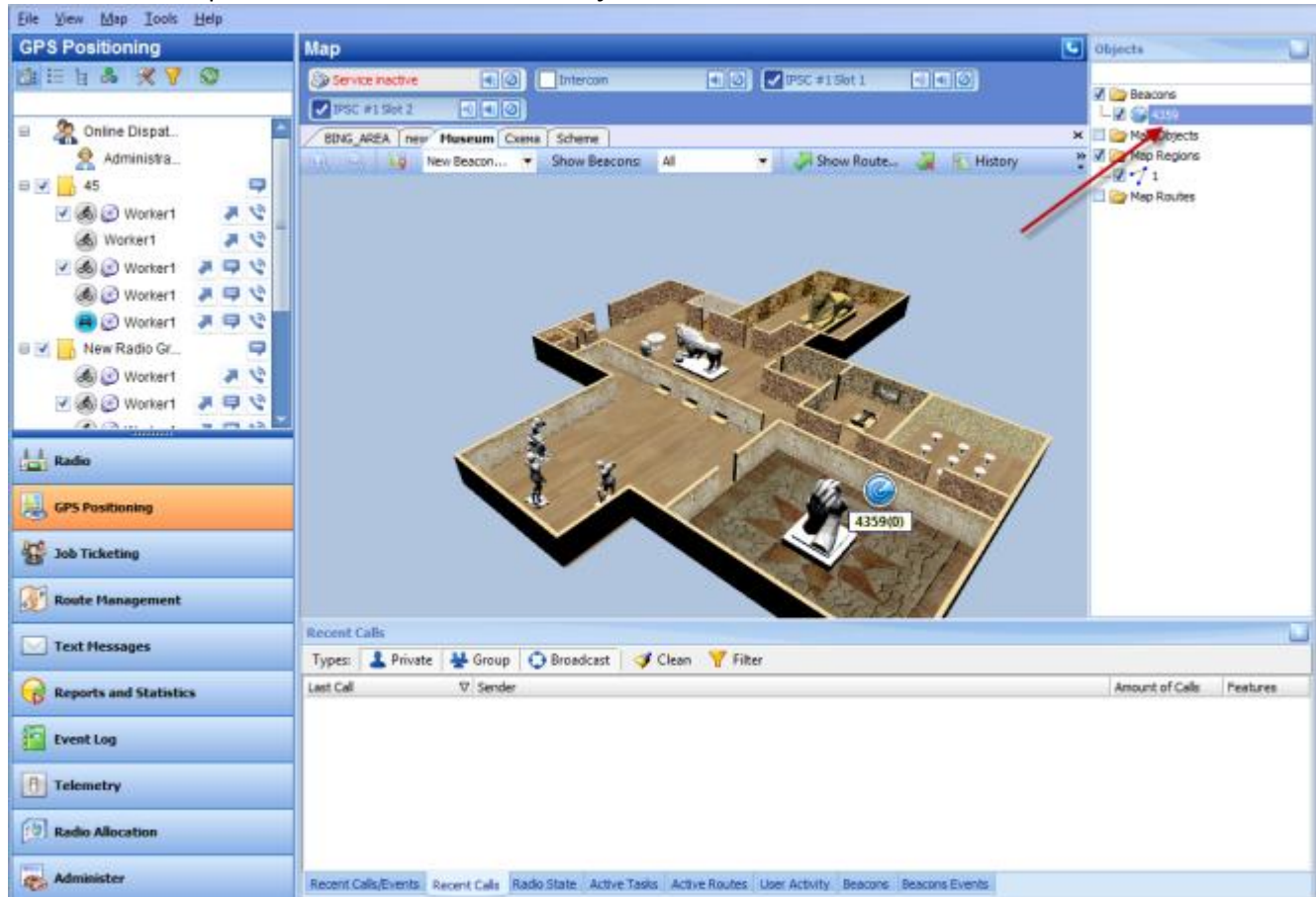
Click **Add** button (4) to add a map and select a map on your PC;
 Click «**OK**» to add a map.

To add a beacon on selected floor plan click «**Set Location**» button (1) and specify new beacon properties (2):



- **Name** – specify new beacon's name;
- **Beacon ID** – select your beacon ID;
- **Description** – add a description for selected beacon.

To edit beacon's parameters select beacon in «**Objects**» list:



Double-click selected beacon to edit parameters.

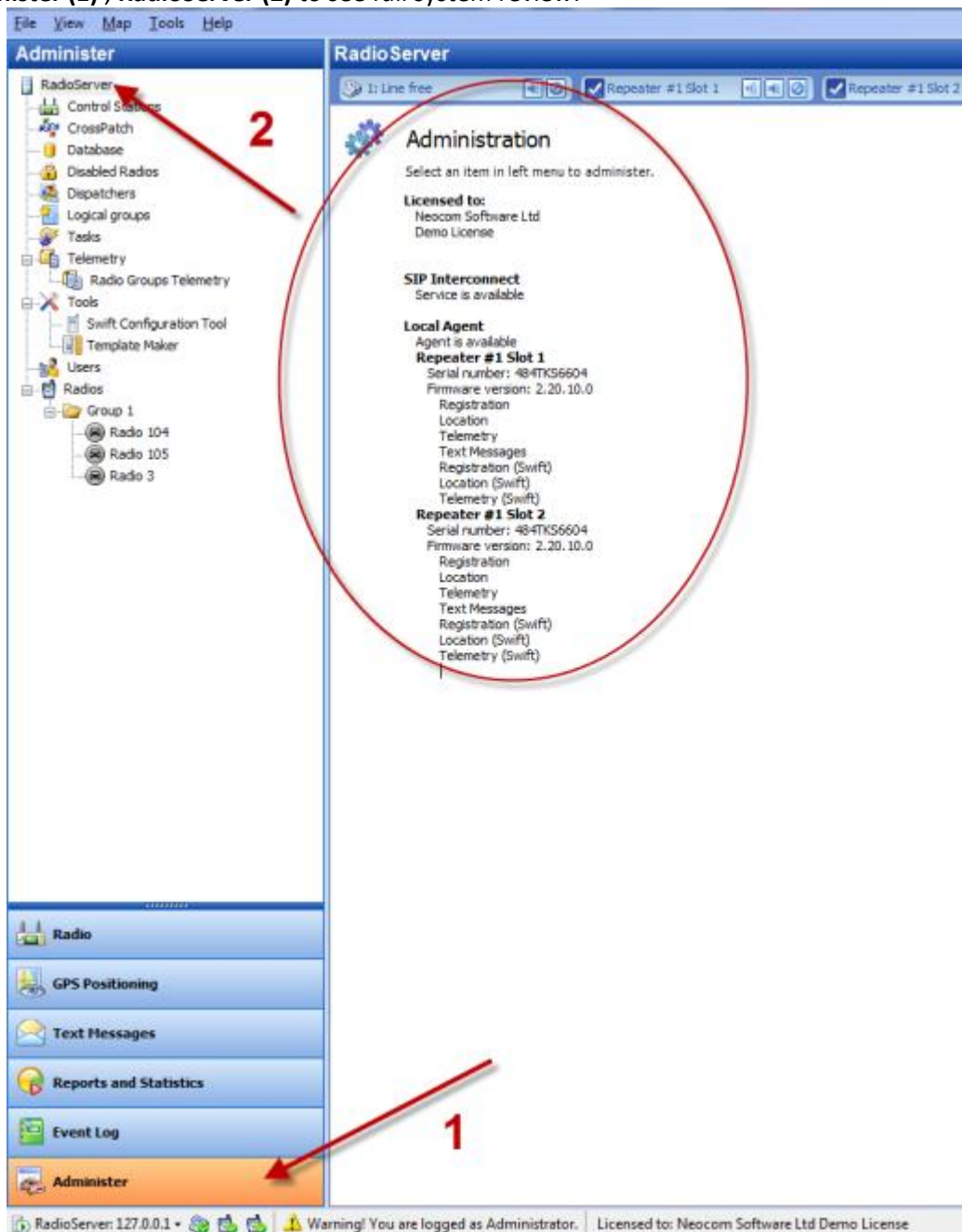
Note: for more details on beacons settings see the following [article](#).

Administration

Go to «**Administer**» section to set system elements and options.

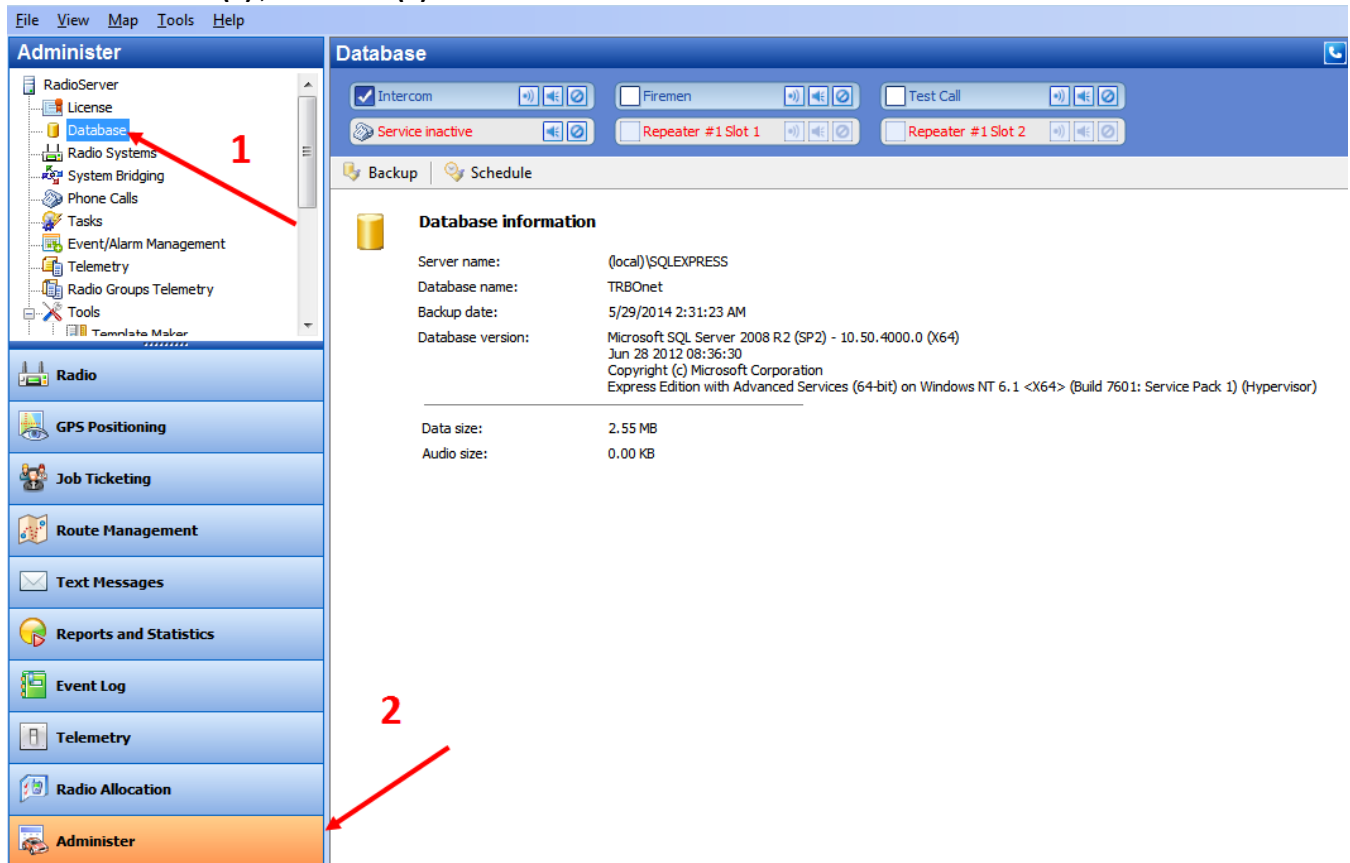
RadioServer

Go to **Administer (1)** , **RadioServer (2)** to see full system review:



Database

Go to **Administer (1)** , **Database (2)** to see full database overview:



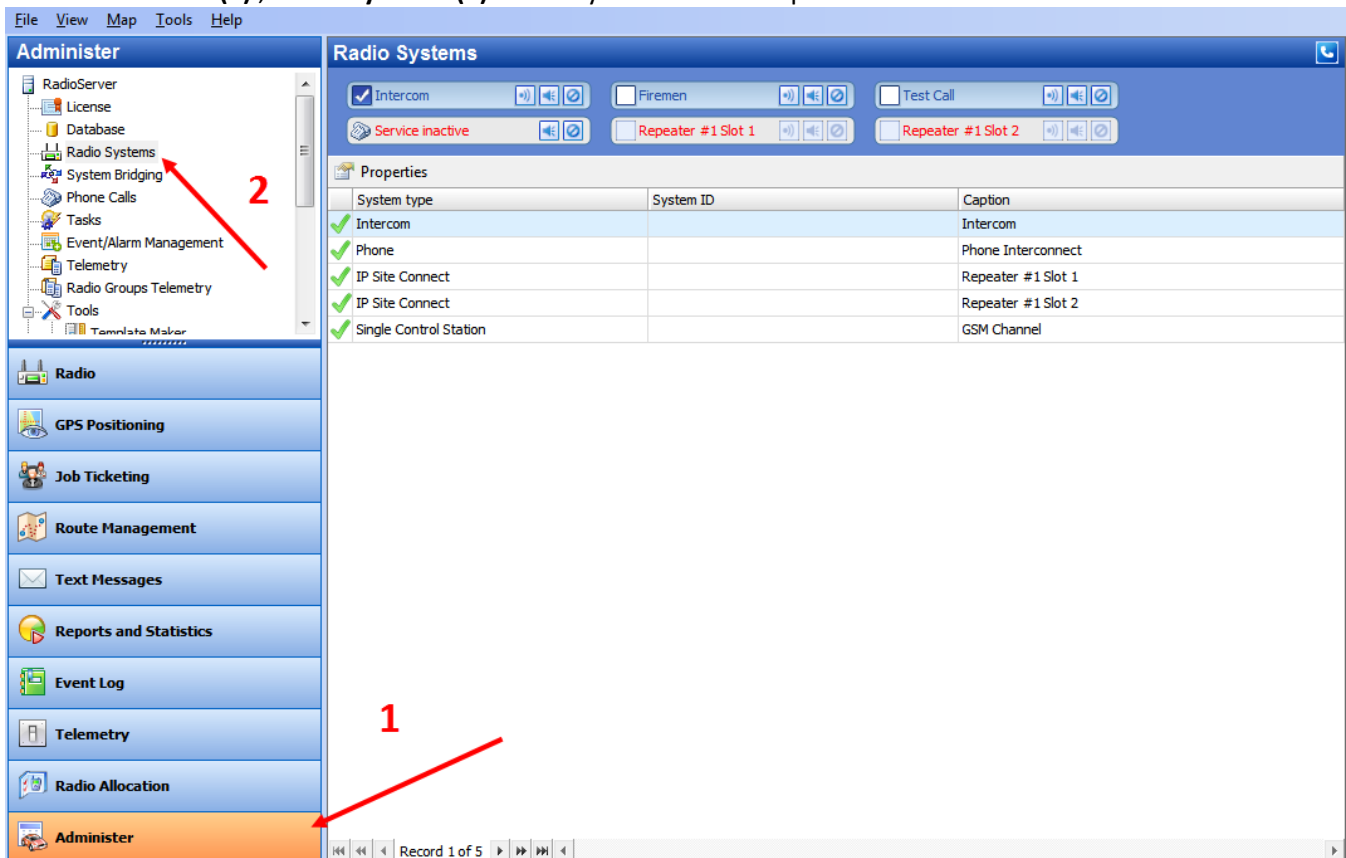
On the **Database** Pane Administrator can restore and backup Database and Audio Recordings.

For more details on backups see [Appendix D:](#)

[Database and Audio Recordings Backup and Restore](#)

Radio Systems

All Radio Systems registered in the Server Configurator are represented on the Radio Systems Pane. Go to **Administer (1)** , **Radio Systems (2)** to see system elements' parameters:



The screenshot shows the TRBOnet software interface. On the left, there is a sidebar with various menu items. The 'Administer' button at the bottom of the sidebar is highlighted with a red arrow and the number 1. In the main area, the 'Radio Systems' pane is active, showing a table of registered radio systems. A red arrow and the number 2 point to the 'Radio Systems' item in the left sidebar.

System type	System ID	Caption
Intercom		Intercom
Phone		Phone Interconnect
IP Site Connect		Repeater #1 Slot 1
IP Site Connect		Repeater #1 Slot 2
Single Control Station		GSM Channel

Administrator can see the following Radio system parameters in the table:

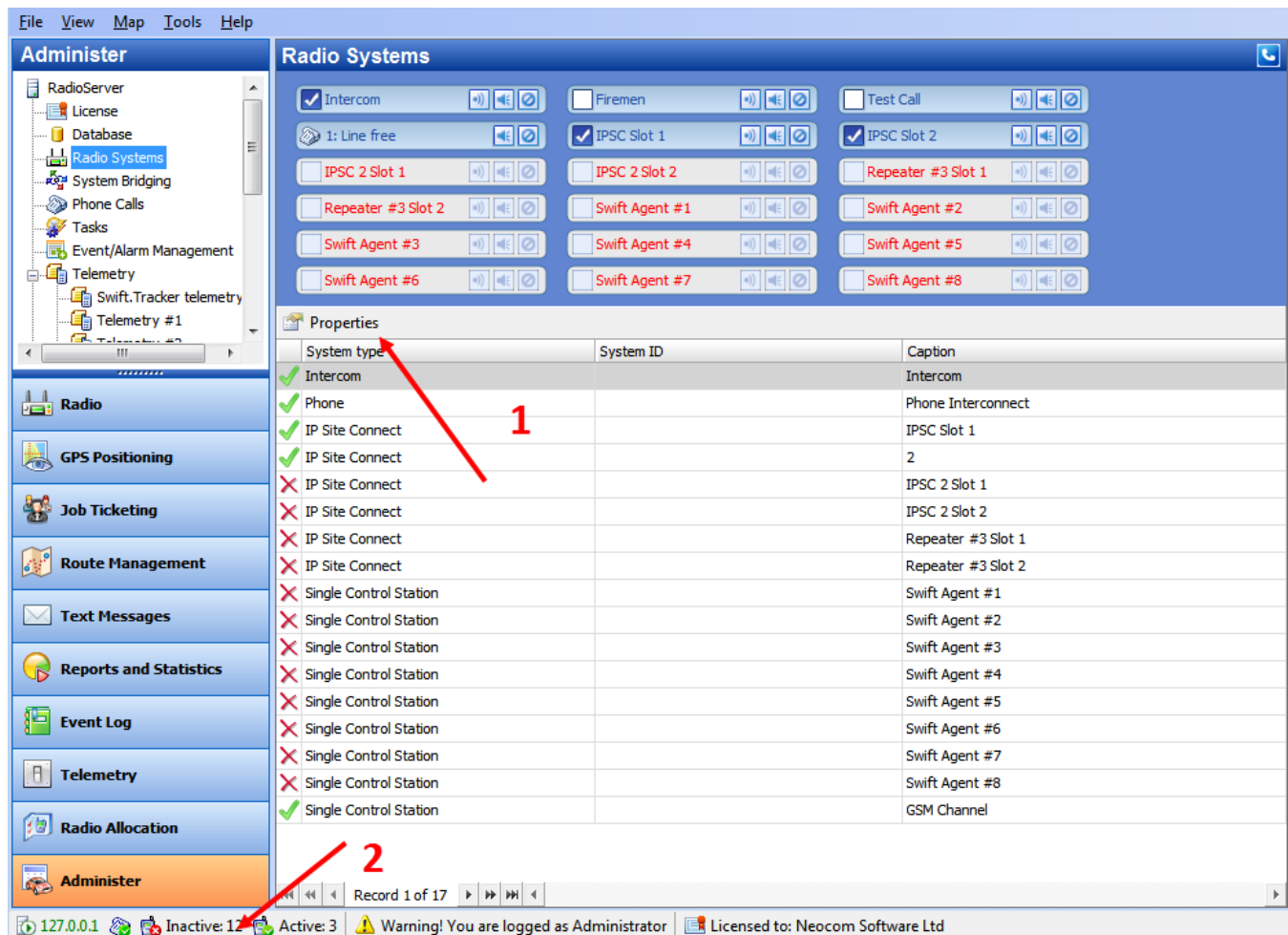
- **System Type** – the list of registered radio systems;
- **System ID** – an unique System Identifier, configured in TRBOnet RadioServer configuration for repeater of controllers of a system;
- **Caption** – channel type to transmit voice and data;

Click «Reset» button (3) to test the connection to system element.

Radio Systems Properties

To see radio systems properties do the following:

1. Select radio system in the list and click «**Properties**» button (1);
2. Double-click selected radio system in the list;
3. Right-click the selected element at the bottom of Dispatch Console window (2):



The screenshot shows the Neocom Software interface. On the left is a sidebar with navigation options. The main window is titled 'Radio Systems' and contains a list of radio systems. The list has columns for 'System type', 'System ID', and 'Caption'. A red arrow labeled '1' points to the 'Properties' button at the bottom of the list. Another red arrow labeled '2' points to the 'Record 1 of 17' text at the bottom of the list.

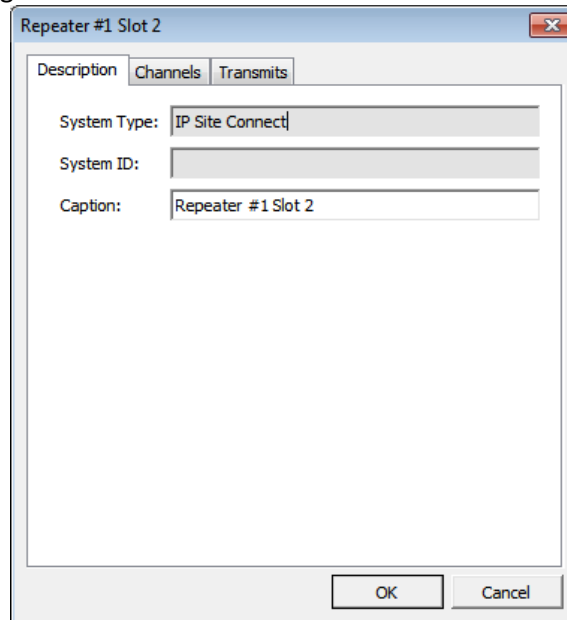
System type	System ID	Caption
Intercom		Intercom
Phone		Phone Interconnect
IP Site Connect		IPSC Slot 1
IP Site Connect		2
IP Site Connect		IPSC 2 Slot 1
IP Site Connect		IPSC 2 Slot 2
IP Site Connect		Repeater #3 Slot 1
IP Site Connect		Repeater #3 Slot 2
Single Control Station		Swift Agent #1
Single Control Station		Swift Agent #2
Single Control Station		Swift Agent #3
Single Control Station		Swift Agent #4
Single Control Station		Swift Agent #5
Single Control Station		Swift Agent #6
Single Control Station		Swift Agent #7
Single Control Station		Swift Agent #8
Single Control Station		GSM Channel

Administrator can see Active and Inactive registered systems. In case you have more than 10 registered systems, systems are grouped and can be seen in the Dropdown list.

Common information for all system elements is listed below:

1. Description tab

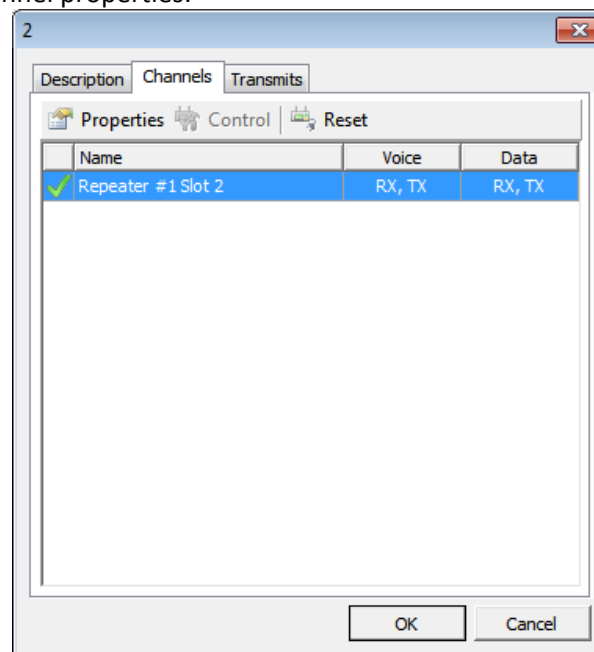
On the **Description** tab see the general info:



- **System Type** – system type for Repeater/digital or analogue mode for Control Station.
 - For Repeater see [MOTOTRBO Radio Systems](#) page.
- **System ID** – an unique System Identifier, configured in TRBOnet RadioServer configuration for repeater of controllers of a system;
- **Caption** – input channel name.

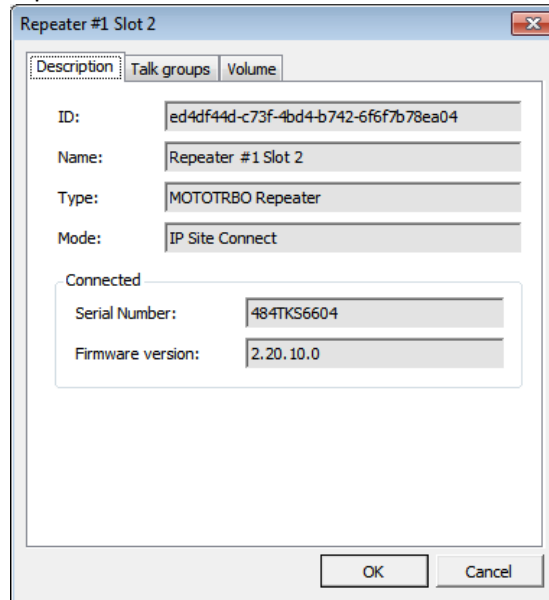
2. Channels

On the **Channels** Page see channel properties:



Name	Voice	Data
✓ Repeater #1 Slot 2	RX, TX	RX, TX

Click «**Properties**» button to see repeater additional data:



Repeater #1 Slot 2

Description | Talk groups | Volume

ID: ed4df44d-c73f-4bd4-b742-6f6f7b78ea04

Name: Repeater #1 Slot 2

Type: MOTOTRBO Repeater

Mode: IP Site Connect

Connected

Serial Number: 484TKS6604

Firmware version: 2.20.10.0

OK Cancel

- **ID** – default registration number (manufacturer's number);
- **Name** – system element's name in the system;
- **Type** – system type for Repeater/digital or analogue mode for Control Station.
 - For Repeater see [MOTOTRBO Radio Systems](#) page.
- **Mode** – system type for Repeater/connection mode for Control Station.
 - For Repeater see [MOTOTRBO Radio Systems](#) page.
 - For Control Station see [Control Station Connection Modes](#) page.

Connected

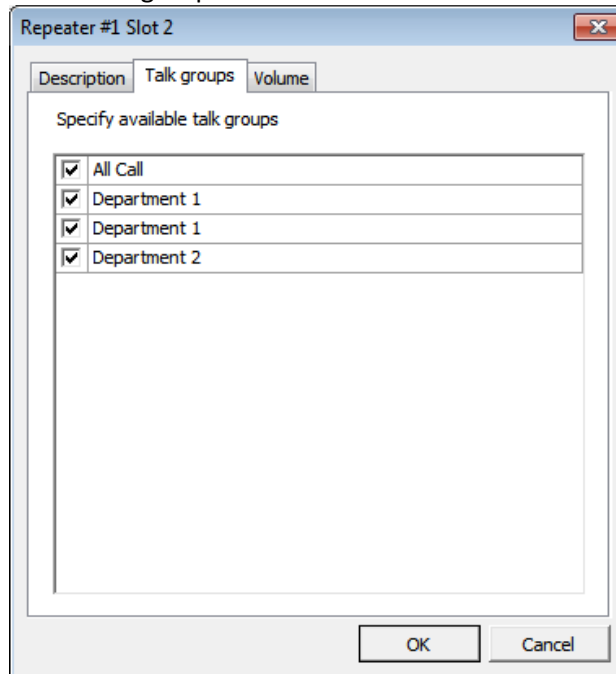
- **Serial number** – default system element's serial number (manufacturer's number);
- **Firmware Version** – current system element's firmware version.

Click «**Reset**» button to test the connection to system element.

Note: For a repeater: «**Reset**» button reconnects the repeater.
 For Control Station: «**Reset**» button reloads the radio.

Talk groups (For Repeaters only)

On the **Talk groups** tab see selected Talk group info:



Specify available Talk groups for the system element in the list of created Talk groups.

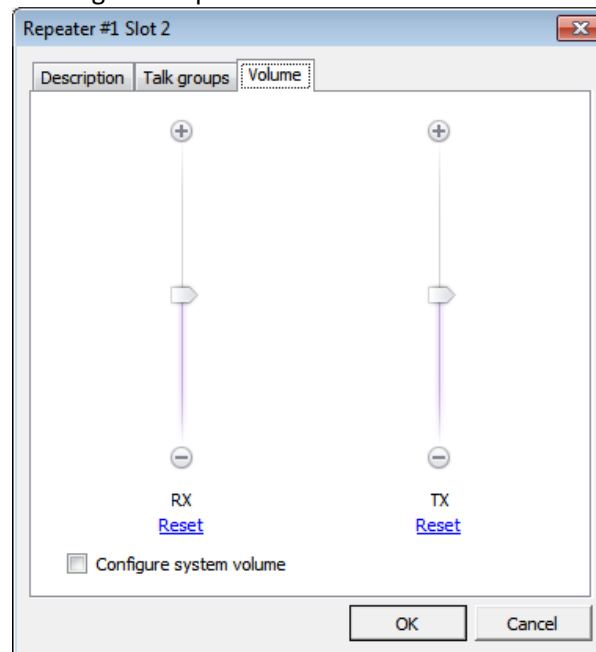
Selected Talk groups are available on **Radio** tab in the system element box in the dropdown list:



Note: close TRBOnet RadioServer Configurator before applying system elements' settings.

Volume tab (for Repeaters only)

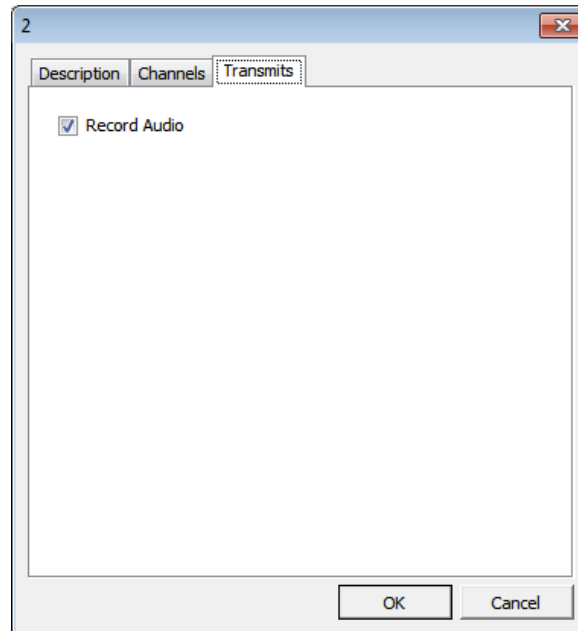
On the **Volume** tab see Volume settings for Repeater:



- Specify RX and TX volume level for the Repeater using Volume control indicator.
- Click «**Reset**» button to set default volume level for RX or TX.
- **Configure system volume** – check to save default volume settings for Voice transmissions from selected Repeater.

3. Transmits tab

On the **Transmits** tab see the information about audio and data transmissions:



- **Record audio** – check to enable audio recordings for selected repeater;

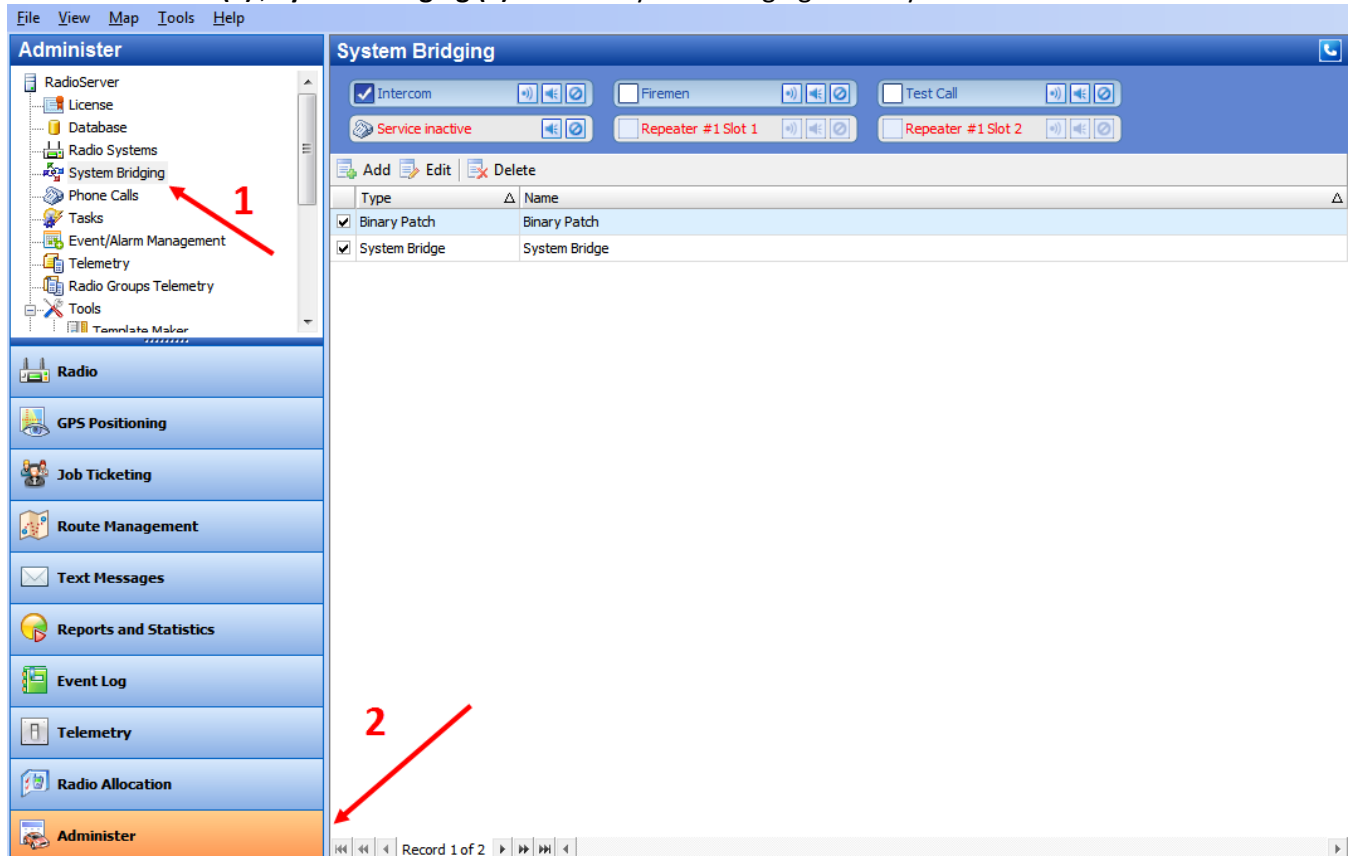
System Bridging

TRBOnet Dispatch Software provides the **System Bridging** function. System Bridging allows configuring the network to redirect calls.

Administrator can create two types of System Bridging:

4. **System Bridging for Master Stations** – allows connecting all types of Radios (analogue and digital radios, supports IP Site Connect, Capacity Plus, Linked Capacity Plus and Connect Plus modes).
5. **System Bridging for repeaters** - allows connecting only repeaters in IP Site Connect mode.

Go to **Administer (1)** , **System Bridging (2)** to add a System Bridging in the system:

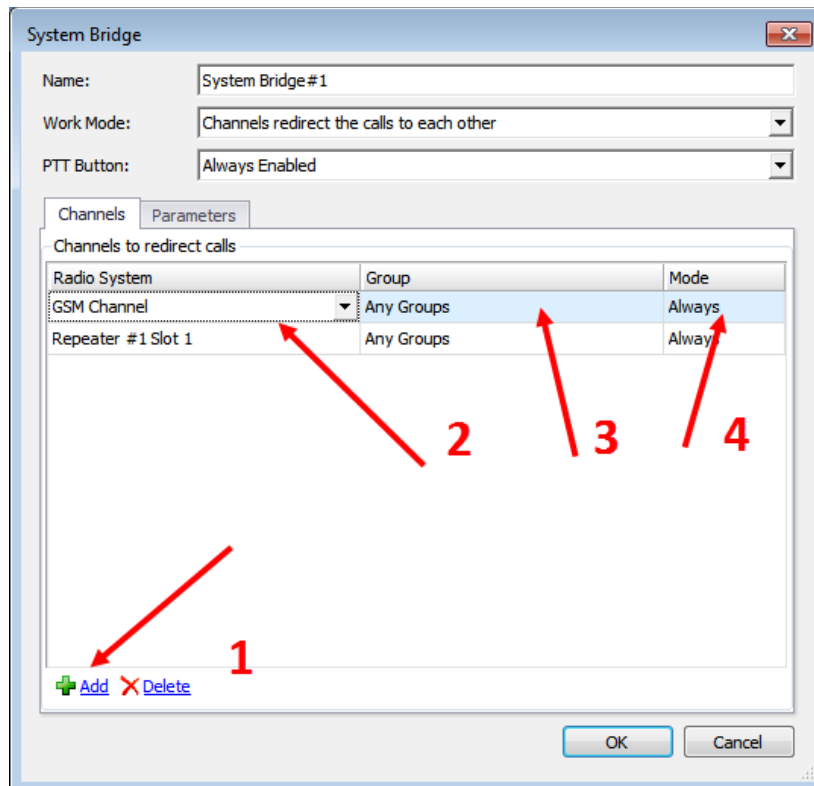


The screenshot shows the TRBOnet Dispatch Software interface. On the left, the 'Administer' menu is expanded, and the 'System Bridging' option is highlighted with a red arrow labeled '1'. The main window displays the 'System Bridging' configuration. At the top, there are checkboxes for 'Intercom', 'Firemen', and 'Test Call'. Below these are 'Service inactive', 'Repeater #1 Slot 1', and 'Repeater #1 Slot 2'. A table lists the system bridging types:

Type	Name
<input checked="" type="checkbox"/> Binary Patch	Binary Patch
<input checked="" type="checkbox"/> System Bridge	System Bridge

A red arrow labeled '2' points to the 'System Bridging' window. At the bottom of the window, there is a status bar showing 'Record 1 of 2'.

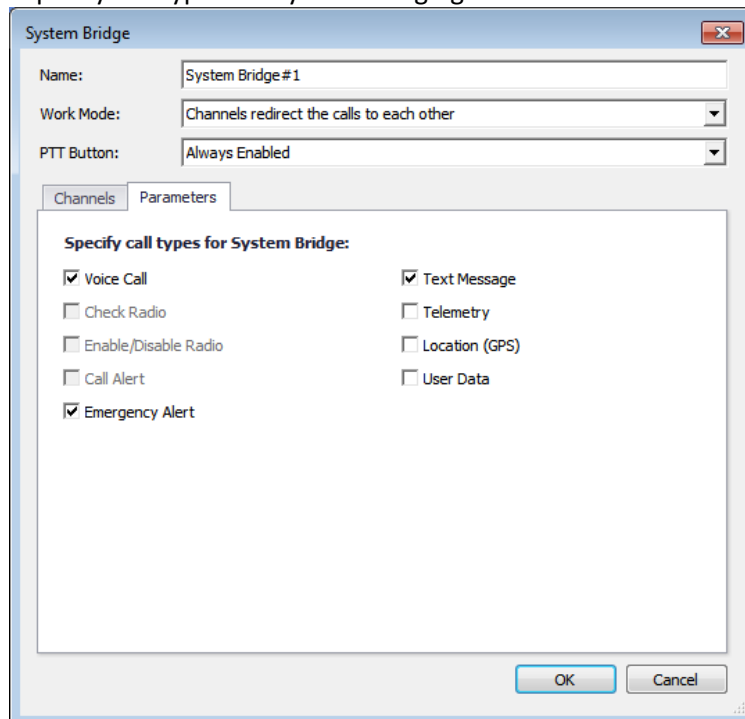
Click «**Add**» button to add a Cross Patch.
 Select the System Bridging type in the dropdown list.
System Bridging for Master Radios:



Radio System	Group	Mode
GSM Channel	Any Groups	Always
Repeater #1 Slot 1	Any Groups	Always

- **Name** – specify a name for System Bridging to display in Radio Interface;
- **Work mode** – select work mode in the dropdown list. For more details on System Bridging for Master Radios types see System Bridging Types page;
- **PTT Button** – set PTT on the System Bridging interface to be able to transmit voice or do not set only to hear the voice from other channels. There are 3 options:
 - ✓ Enable when System Bridging enabled
 - ✓ Always enable
 - ✓ Invisible
- On the «**Control Stations**» tab select Control Stations and its parameters for Cross Patch.
- Click «**Add**» button (1) to add a Radio in the list.
- In the «**Control Station**» column select a radio in the dropdown list (2);
- In the «**Group**» column select available group for the radio (3);
- In the «**Mode**» column select a mode for the Radio (4).
 - ✓ Select «**Always**» to enable System Bridging option always, regardless of radio status (online/offline).
 - ✓ Select «**ByRadio**» to enable System Bridging option on selected channel when there are online radios capable to receive Voice Calls from selected group.

On the «Parameters» tab specify call types for System Bridging:



System Bridge

Name: System Bridge #1

Work Mode: Channels redirect the calls to each other

PTT Button: Always Enabled

Channels Parameters

Specify call types for System Bridge:

☒ Voice Call ☒ Text Message

☐ Check Radio ☐ Telemetry

☐ Enable/Disable Radio ☐ Location (GPS)

☐ Call Alert ☐ User Data

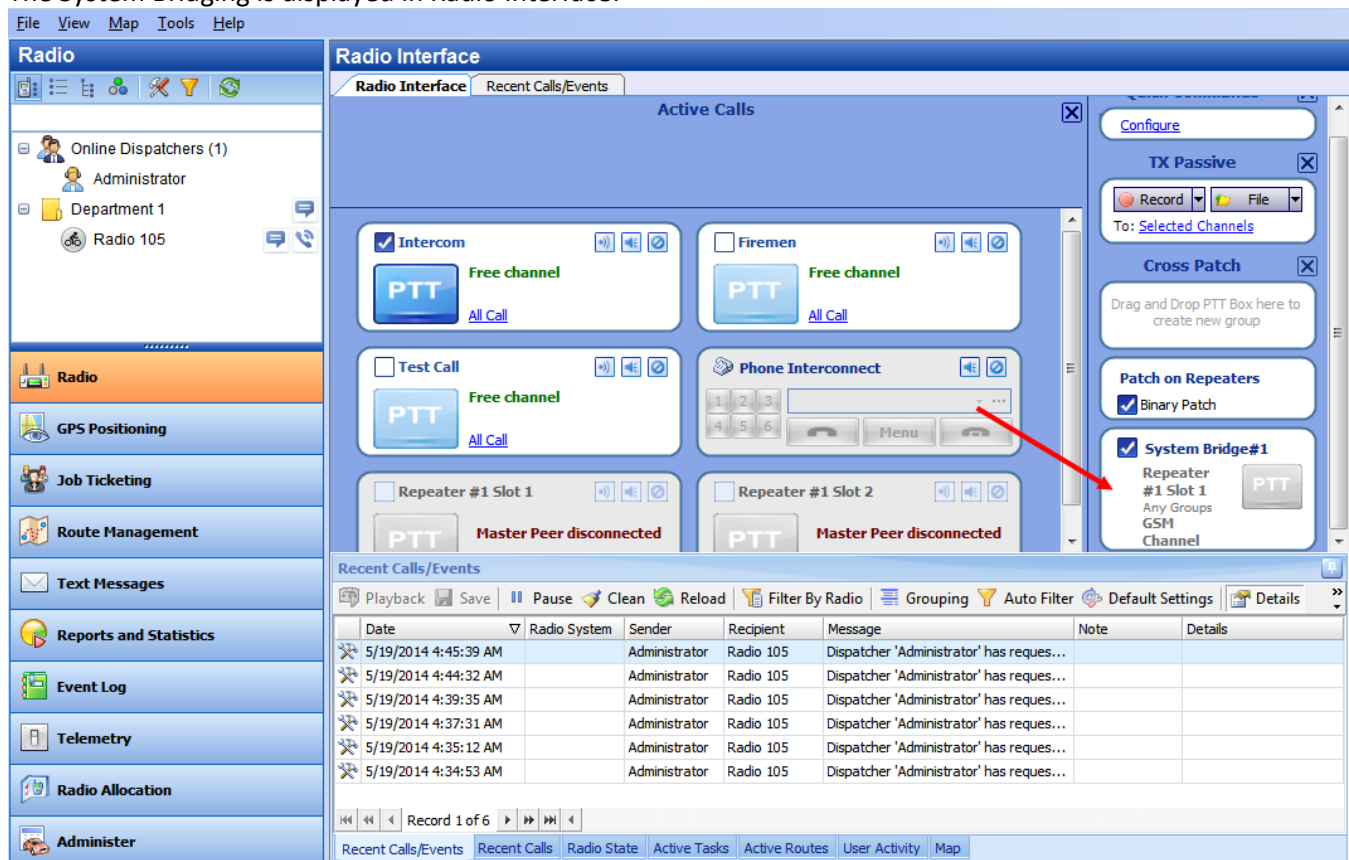
☒ Emergency Alert

OK Cancel

Check call types to use in System Bridging mode.

Click «OK» to add the System Bridging for Master Radios.

The System Bridging is displayed in Radio Interface:



File View Map Tools Help

Radio

Online Dispatchers (1)
 Administrator
 Department 1
 Radio 105

Radio Interface

Radio Interface Recent Calls/Events

Active Calls

☒ Intercom **Free channel** **PTT** **All Call**

☐ Firemen **Free channel** **PTT** **All Call**

☐ Test Call **Free channel** **PTT** **All Call**

☐ Phone Interconnect

☐ Repeater #1 Slot 1 **Master Peer disconnected** **PTT**

☐ Repeater #1 Slot 2 **Master Peer disconnected** **PTT**

System Bridge#1
 Repeater #1 Slot 1
 Any Groups
 GSM Channel
PTT

Recent Calls/Events

Date	Radio System	Sender	Recipient	Message	Note	Details
5/19/2014 4:45:39 AM		Administrator	Radio 105	Dispatcher 'Administrator' has reques...		
5/19/2014 4:44:32 AM		Administrator	Radio 105	Dispatcher 'Administrator' has reques...		
5/19/2014 4:39:35 AM		Administrator	Radio 105	Dispatcher 'Administrator' has reques...		
5/19/2014 4:37:31 AM		Administrator	Radio 105	Dispatcher 'Administrator' has reques...		
5/19/2014 4:35:12 AM		Administrator	Radio 105	Dispatcher 'Administrator' has reques...		
5/19/2014 4:34:53 AM		Administrator	Radio 105	Dispatcher 'Administrator' has reques...		

Record 1 of 6

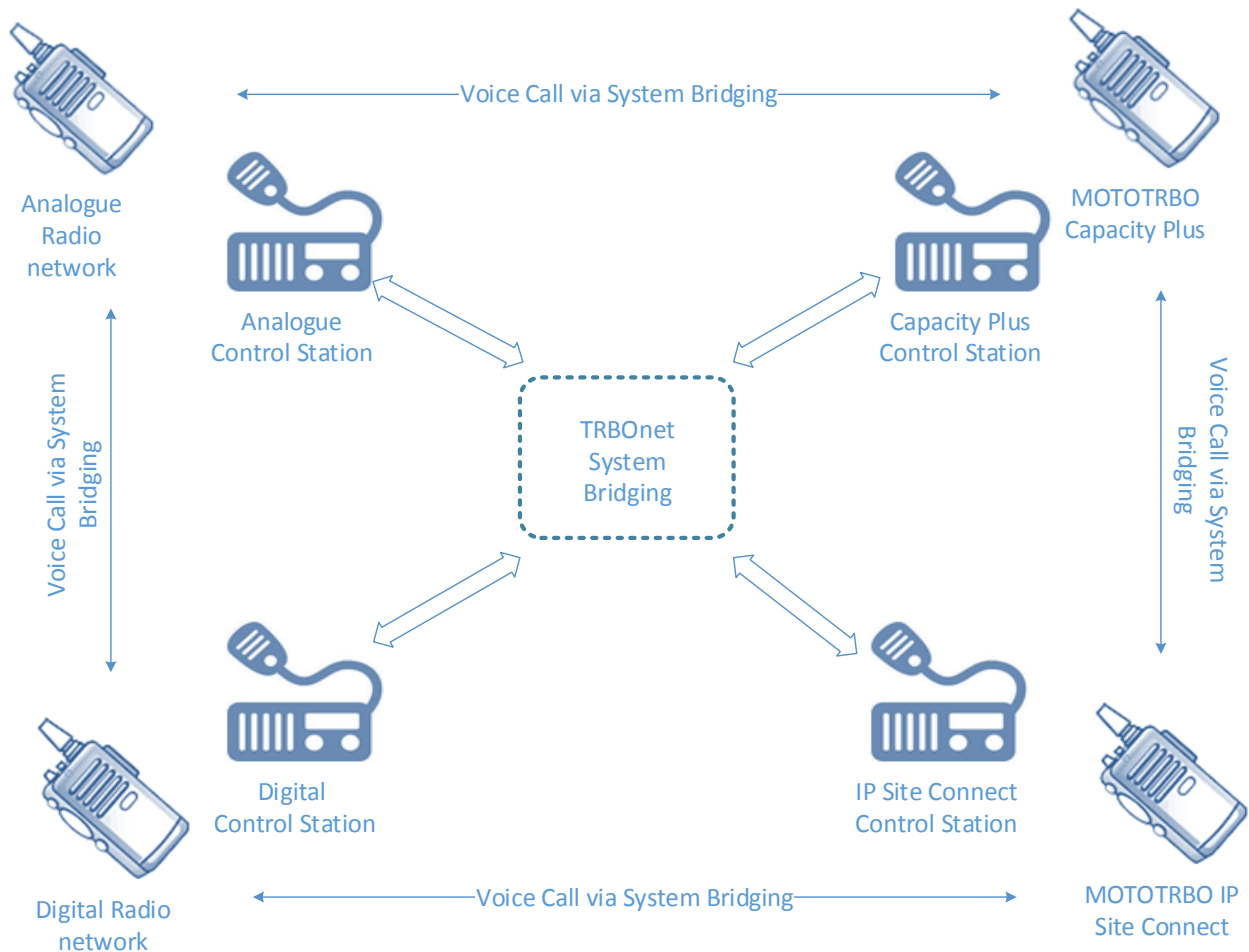
Recent Calls/Events Recent Calls Radio State Active Tasks Active Routes User Activity Map

System Bridging Types

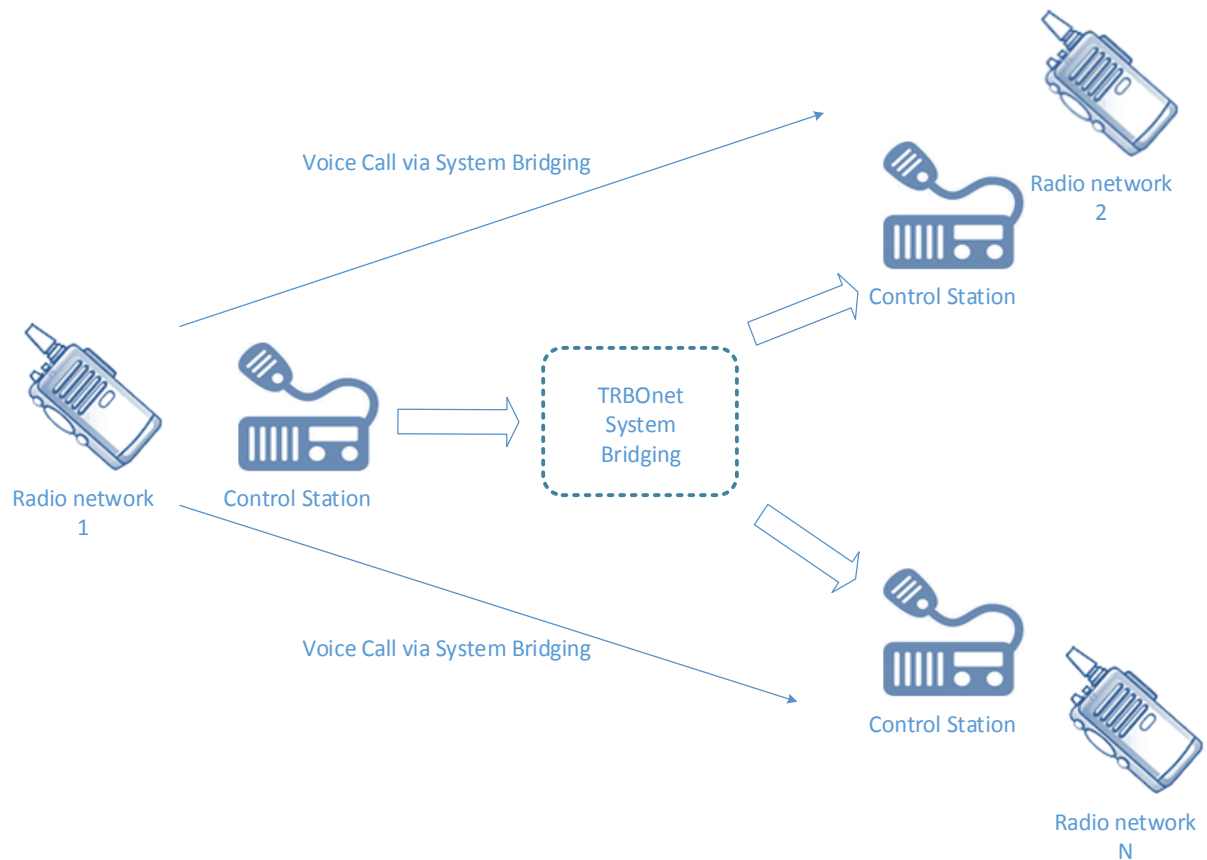
1. Control stations redirect call to each other.

This is the most common type of System Bridging when data exchanges between the Control Stations set in the System Bridging settings. Thus, there is a common channel for all the subscribers of the specified control stations:

To create this mode of System Bridging add a System Bridging and set the Work Mode as **Control stations redirect the calls to each other**.

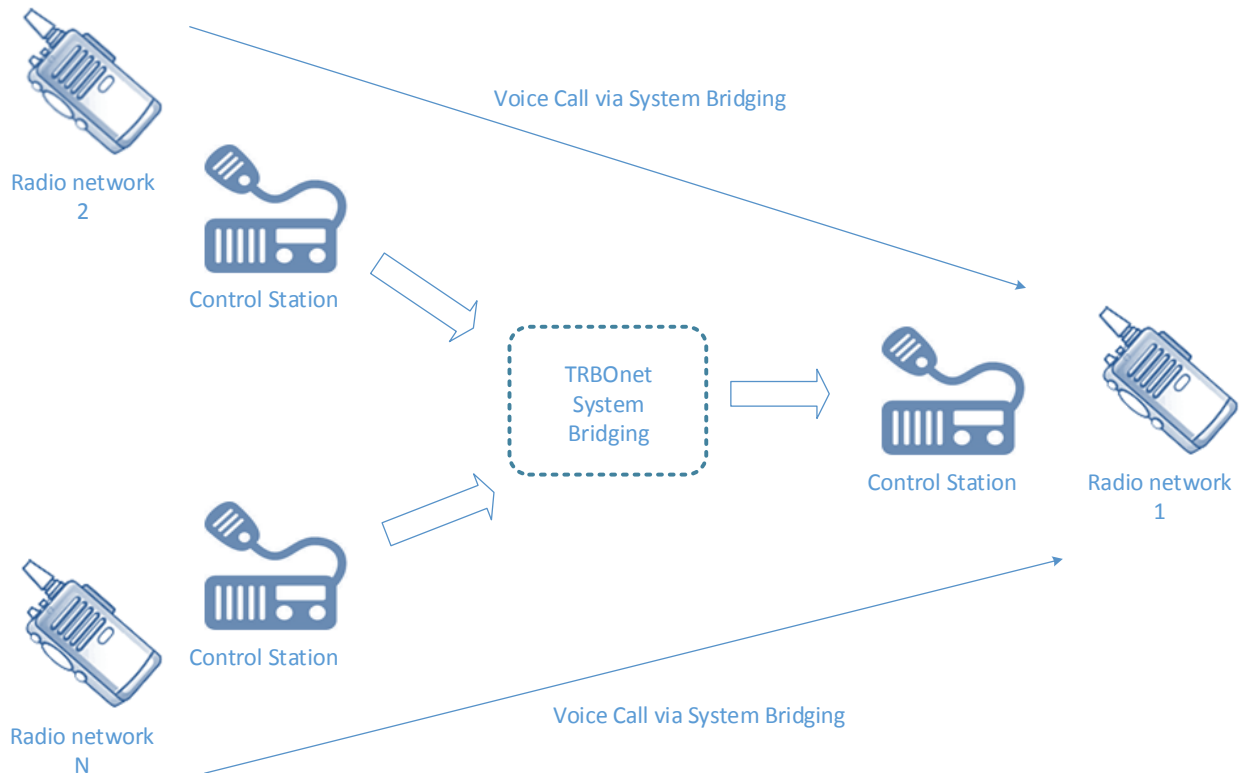


2. One control station redirects calls to many control stations.



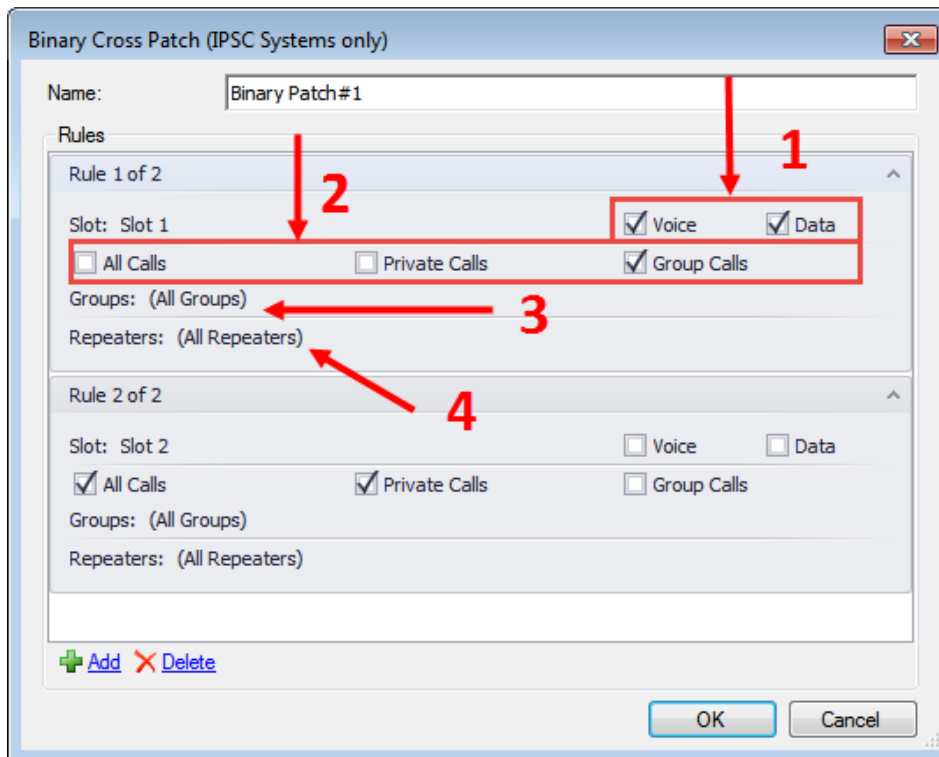
To create this type of System Bridging add a System Bridging and set the Work Mode as **One control station redirects the calls to several Control stations**.

3. Many control stations redirect calls to one control station.



To create this type of System Bridging add a System Bridging and set the Work Mode as **Control stations redirect the calls to one control station.**

Binary Patch:

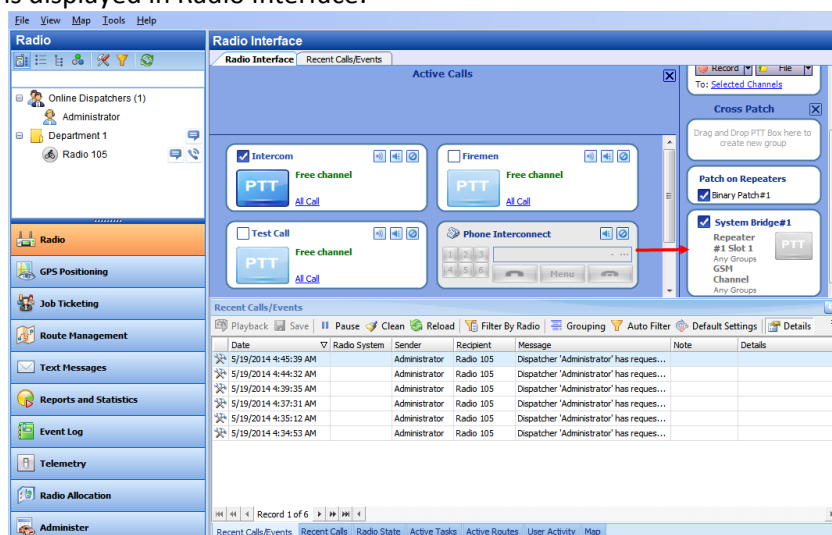


Name – specify a name for System Bridging to display in Radio Interface.

Rules – specify rules for System Bridging to redirect calls.

- 1 – Check **Voice / Data** to transmit on the selected slot;
- 2 – Select available **Call types**;
- 3 – Select available **groups** for System Bridging in the dropdown list;
- 4 – Select available **repeaters** to redirect calls in new System Bridging in the dropdown list.

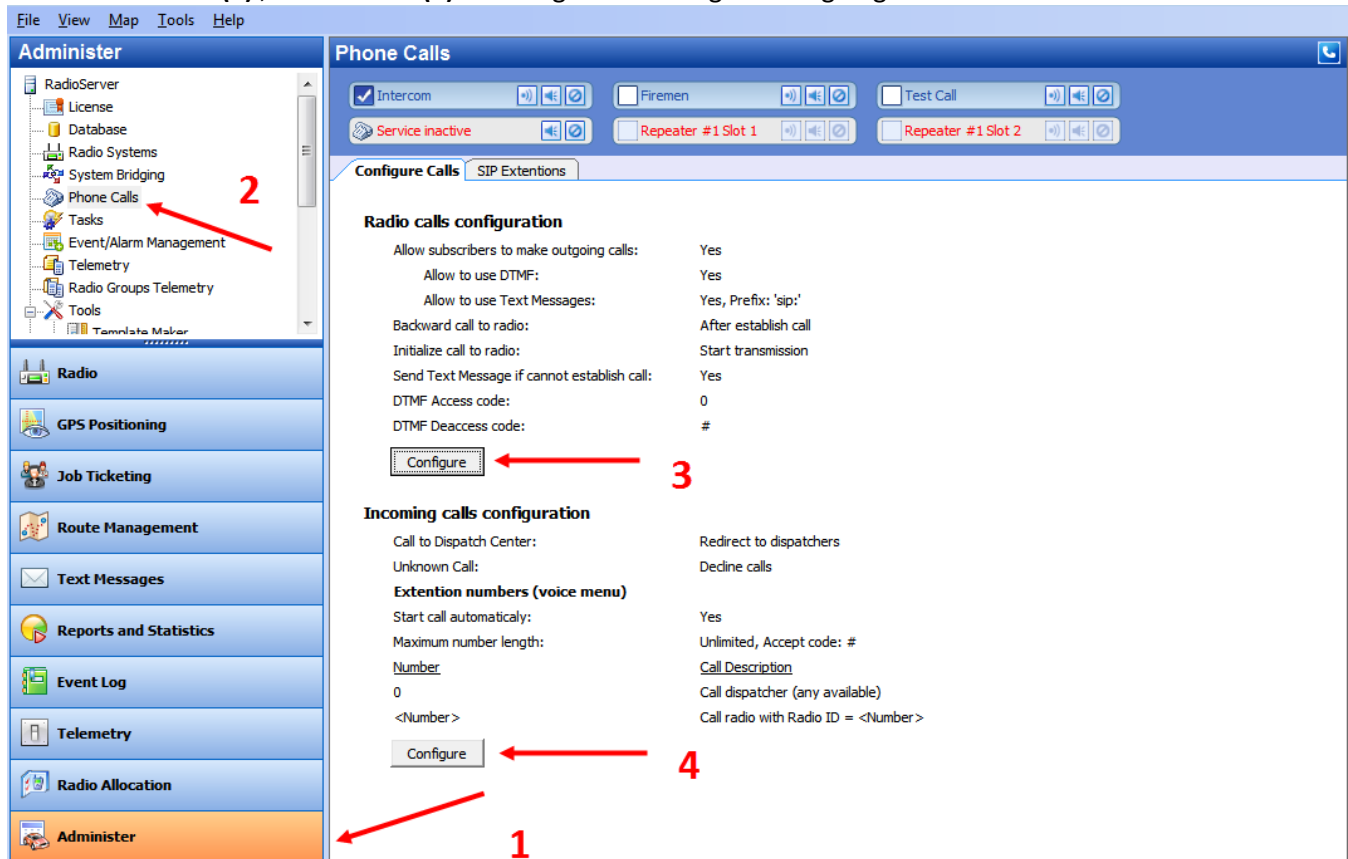
The System Bridging is displayed in Radio Interface:



Note: System Bridging can be created in Radio Interface. It is a temporary System Bridging; it will be deleted after reconnection to TRBOnet RadioServer or exit Dispatch Console.

Phone Calls

Go to **Administer (1)** , **Phone Calls (2)** to configure incoming and outgoing SIP calls:



The screenshot shows the TRBOnet software interface. On the left is a navigation pane with a tree view containing items like RadioServer, License, Database, Radio Systems, System Bridging, Phone Calls, Tasks, Event/Alarm Management, Telemetry, Radio Groups Telemetry, Tools, and Template Maker. Below this is a menu bar with items like Radio, GPS Positioning, Job Ticketing, Route Management, Text Messages, Reports and Statistics, Event Log, Telemetry, Radio Allocation, and Administer. The main window is titled 'Phone Calls' and contains several configuration sections. Red arrows and numbers indicate the steps to reach the configuration page:

- 1**: Arrow pointing to the 'Administer' menu item in the left navigation pane.
- 2**: Arrow pointing to the 'Phone Calls' item in the tree view.
- 3**: Arrow pointing to the 'Configure' button in the 'Radio calls configuration' section.
- 4**: Arrow pointing to the 'Configure' button in the 'Incoming calls configuration' section.

The 'Phone Calls' window has a menu bar with 'File', 'View', 'Map', 'Tools', and 'Help'. Below the menu bar is a toolbar with buttons for 'Intercom', 'Firemen', 'Test Call', 'Service inactive', 'Repeater #1 Slot 1', and 'Repeater #1 Slot 2'. The main content area is divided into two tabs: 'Configure Calls' and 'SIP Extensions'. The 'Configure Calls' tab is active and contains two sections:

- Radio calls configuration**: A table of settings for radio calls.

Allow subscribers to make outgoing calls:	Yes
Allow to use DTMF:	Yes
Allow to use Text Messages:	Yes, Prefix: 'sip:'
Backward call to radio:	After establish call
Initialize call to radio:	Start transmission
Send Text Message if cannot establish call:	Yes
DTMF Access code:	0
DTMF Deaccess code:	#
- Incoming calls configuration**: A table of settings for incoming calls.

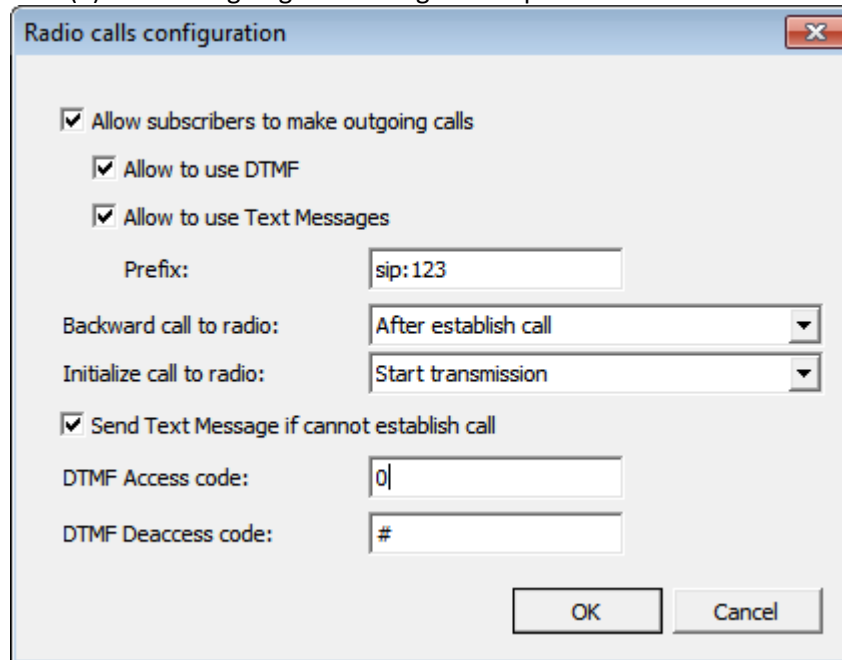
Call to Dispatch Center:	Redirect to dispatchers
Unknown Call:	Decline calls

Below the 'Incoming calls configuration' table is a section for 'Extention numbers (voice menu)' with a table of settings:

Start call automaticly:	Yes
Maximum number length:	Unlimited, Accept code: #
Number	0
<Number>	Call dispatcher (any available)
	Call radio with Radio ID = <Number>

Outgoing Calls Configuration

Click «Configure» button (3) to set Outgoing calls configuration parameters:



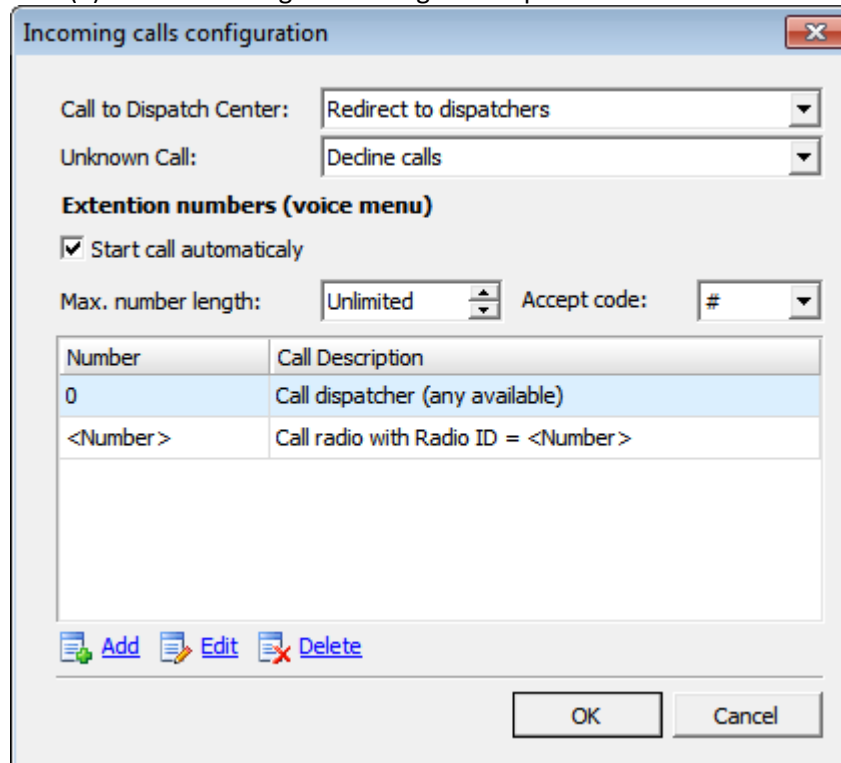
The dialog box titled "Radio calls configuration" contains the following settings:

- ☒ Allow subscribers to make outgoing calls
- ☒ Allow to use DTMF
- ☒ Allow to use Text Messages
- Prefix:
- Backward call to radio:
- Initialize call to radio:
- ☒ Send Text Message if cannot establish call
- DTMF Access code:
- DTMF Deaccess code:
- Buttons: OK, Cancel

- **Allow subscribers to make outgoing calls** – select to enable outgoing phone calls for subscribers;
- **Allow to use DTMF** - check to allow radio subscribers to dial the phone number on the radio keyboard.
- **Allow to use Text Messages** – select to enable Text Messages service in SIP Interconnect;
- **Prefix** - a standard prefix for TMS Service (text messaging);
- **Backward call to radio** – select mode to redirect phone call to radio in the dropdown list:
 - ✓ **After establish call** – when a subscriber initiates a phone call to radio, the Dispatcher must answer the call, after that the phone call will be redirected to a radio;
 - ✓ **Before establish call** – when a subscriber initiates a phone call it will be automatically redirected to a radio.
- **Initialize call to radio** – select option to start a call to a radio.
 - ✓ **Start Transmission** – select to start call to a radio automatically
 - ✓ **Send Ringtone** – select to use beep tone until radio user presses PTT.
- **Send text message if cannot establish call** – check if you want to receive text message when the channel is busy during a phone call;
- **DTMF Access Code** – set DTMF Access Code «0»
- **DTMF Deaccess Code** - set DTMF Deaccess Code «#».

Incoming Calls Configuration

Click «Configure» button (4) to set Incoming calls configuration parameters:



The dialog box titled "Incoming calls configuration" contains the following elements:

- Call to Dispatch Center:** A dropdown menu with "Redirect to dispatchers" selected.
- Unknown Call:** A dropdown menu with "Decline calls" selected.
- Extention numbers (voice menu):**
 - ☒ **Start call automatically**
 - Max. number length:** A spinner box set to "Unlimited".
 - Accept code:** A dropdown menu with "#" selected.
- Table:**

Number	Call Description
0	Call dispatcher (any available)
<Number>	Call radio with Radio ID = <Number>
- Buttons:** "Add" (with a plus icon), "Edit" (with a pencil icon), "Delete" (with a minus icon), "OK", and "Cancel".

- **Call to Dispatch Center** – select an option for input calls in the dropdown list:
 - ✓ **Decline calls** – all input phone calls will be declined;
 - ✓ **Open Voice menu** – when an input call starts the subscriber will hear Voice menu commands;
 - ✓ **Redirect to dispatchers** – all input voice calls will be redirected to all dispatchers of the Dispatch center and any free dispatcher will answer the phone call.
- **Unknown Call** – select mode to receive calls from unregistered subscribers:
 - ✓ **Decline Calls** – select to cancel all calls from unregistered subscribers;
 - ✓ **Use number as Radio ID** – select to allow system read unregistered number as Radio ID and start Private Call;
 - ✓ **Use number as Internal** – select to allow system read unregistered number according to Voice Menu rules.

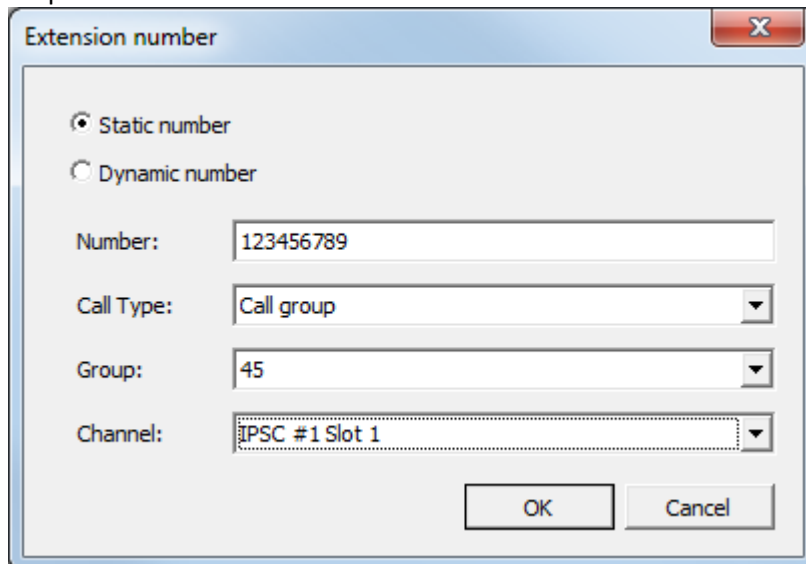
Extention numbers (Voice menu)

- **Start call automatically** – select to search the number in the table automatically. When the option is disabled the subscriber must dial the number according to the following example: **0(phone number)#**. Character # used to search the phone number in the table.
- **Max. number length** – specify a max. phone number characters.
- **Accept Code** – used as handle to finish dialing number in Voice Menu.

All available numbers are listed in the table below (contact list) with number value and description. Click «Add» button to add a number in the table.

To add a static number

Static number – numeric phone number:

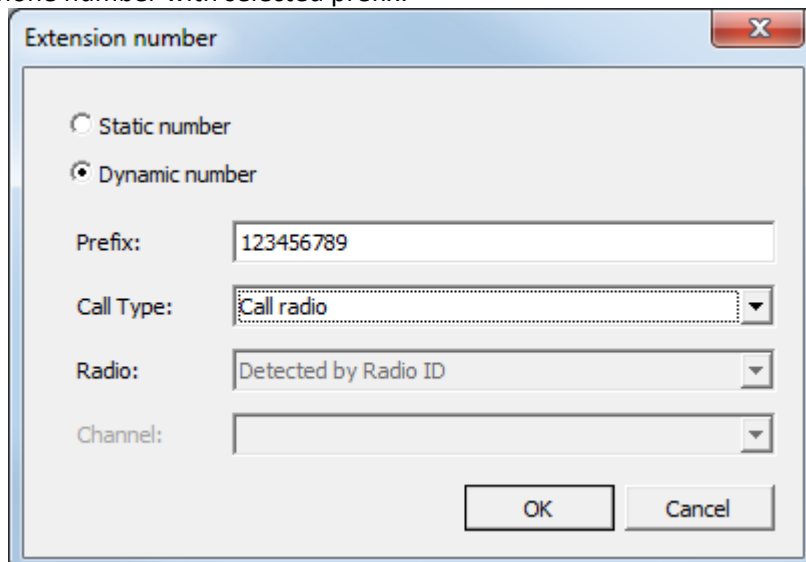


The dialog box titled "Extension number" has a close button (X) in the top right corner. It contains two radio buttons: "Static number" (selected) and "Dynamic number". Below the radio buttons are four input fields: "Number:" with the value "123456789", "Call Type:" with a dropdown menu showing "Call group", "Group:" with a dropdown menu showing "45", and "Channel:" with a dropdown menu showing "IPSC #1 Slot 1". At the bottom right are "OK" and "Cancel" buttons.

- **Number** – type in a phone number to add in the table (contact list);
- **Call Type** – select a call type in the dropdown list;
- **Dispatcher** – select a Dispatcher to make a phone call (for **Dispatch Call**). **Radio** – select a radio to make a phone call (for **Call Radio**). **Group** - select a group to make a phone call (for **Group Call**);
- **Channel** – select a channel to make a phone call (available for Group Call only).

To add a Dynamic number

Dynamic number – phone number with selected prefix:



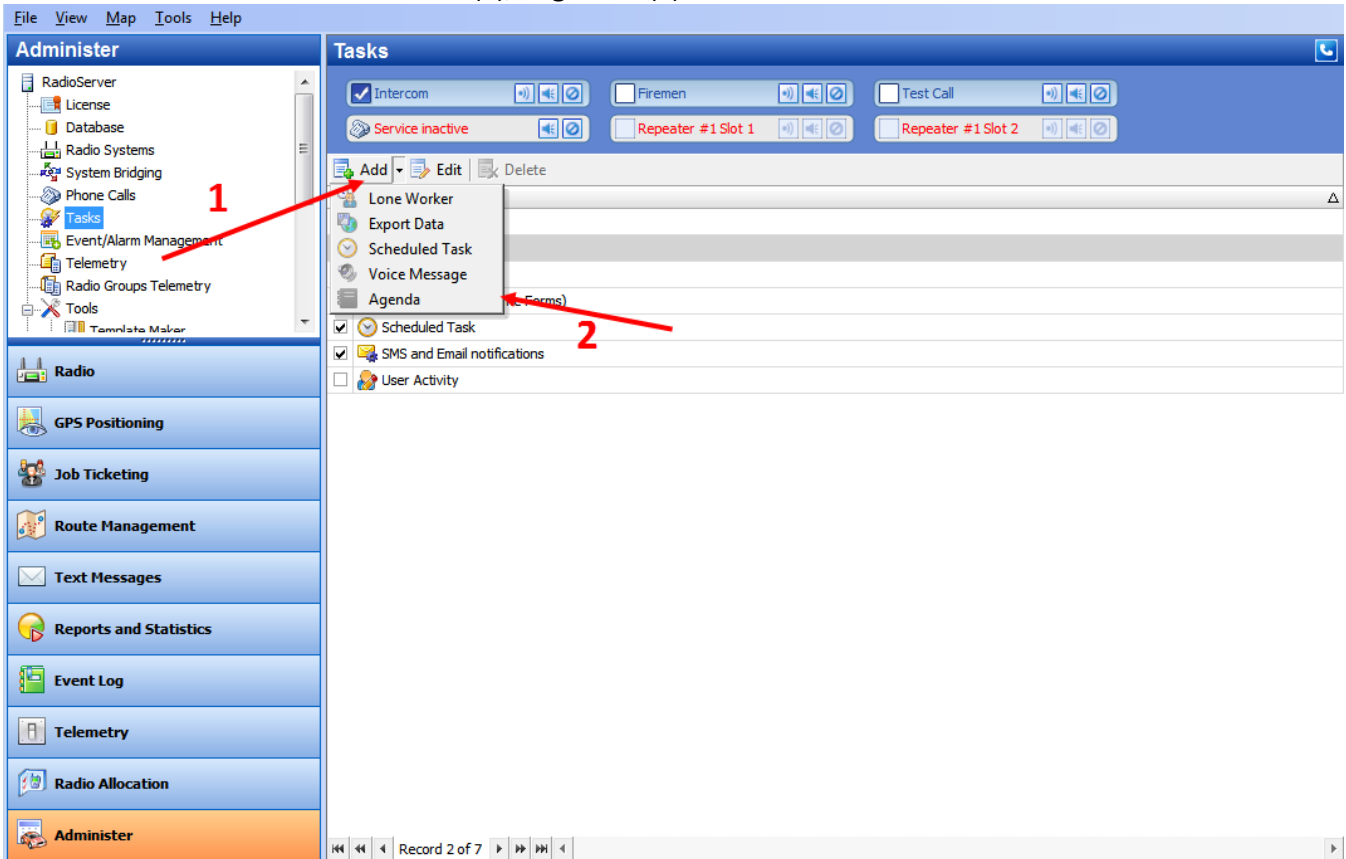
The dialog box titled "Extension number" has a close button (X) in the top right corner. It contains two radio buttons: "Static number" and "Dynamic number" (selected). Below the radio buttons are four input fields: "Prefix:" with the value "123456789", "Call Type:" with a dropdown menu showing "Call radio", "Radio:" with a dropdown menu showing "Detected by Radio ID", and "Channel:" with an empty dropdown menu. At the bottom right are "OK" and "Cancel" buttons.

- **Prefix** – specify a prefix for phone calls to type in on the radio keyboard;
- **Call Type** – select a call type in the dropdown list;
- **Radio/Group call** – to make phone call to the selected radio/group the subscriber must type in radio ID/Group ID on the keyboard
- **Channel** – select a channel to make a phone call (available for Group Call only).

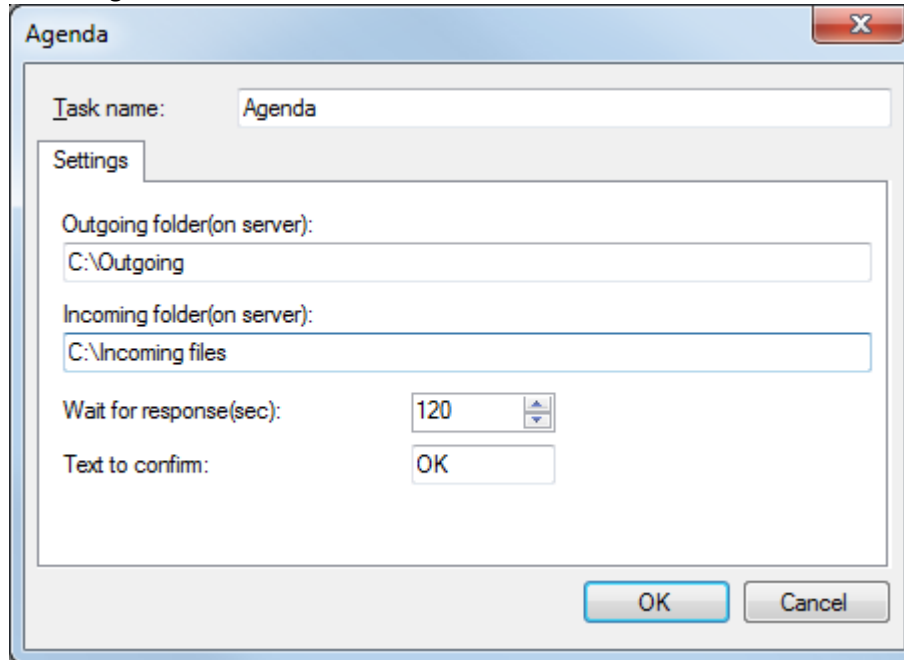
Tasks

Agenda

Agenda is used to automatically send predefined messages to the radios. It may be used when you have any software receiving any messages but it is not able to send them to the subscribers. In this case TRBOnet Dispatch Software acts like an intermediary - it receives the messages from the folder and sends them to radios. To enable the tasks click «Add» button (1), «Agenda» (2):



Specify **Agenda** task settings:



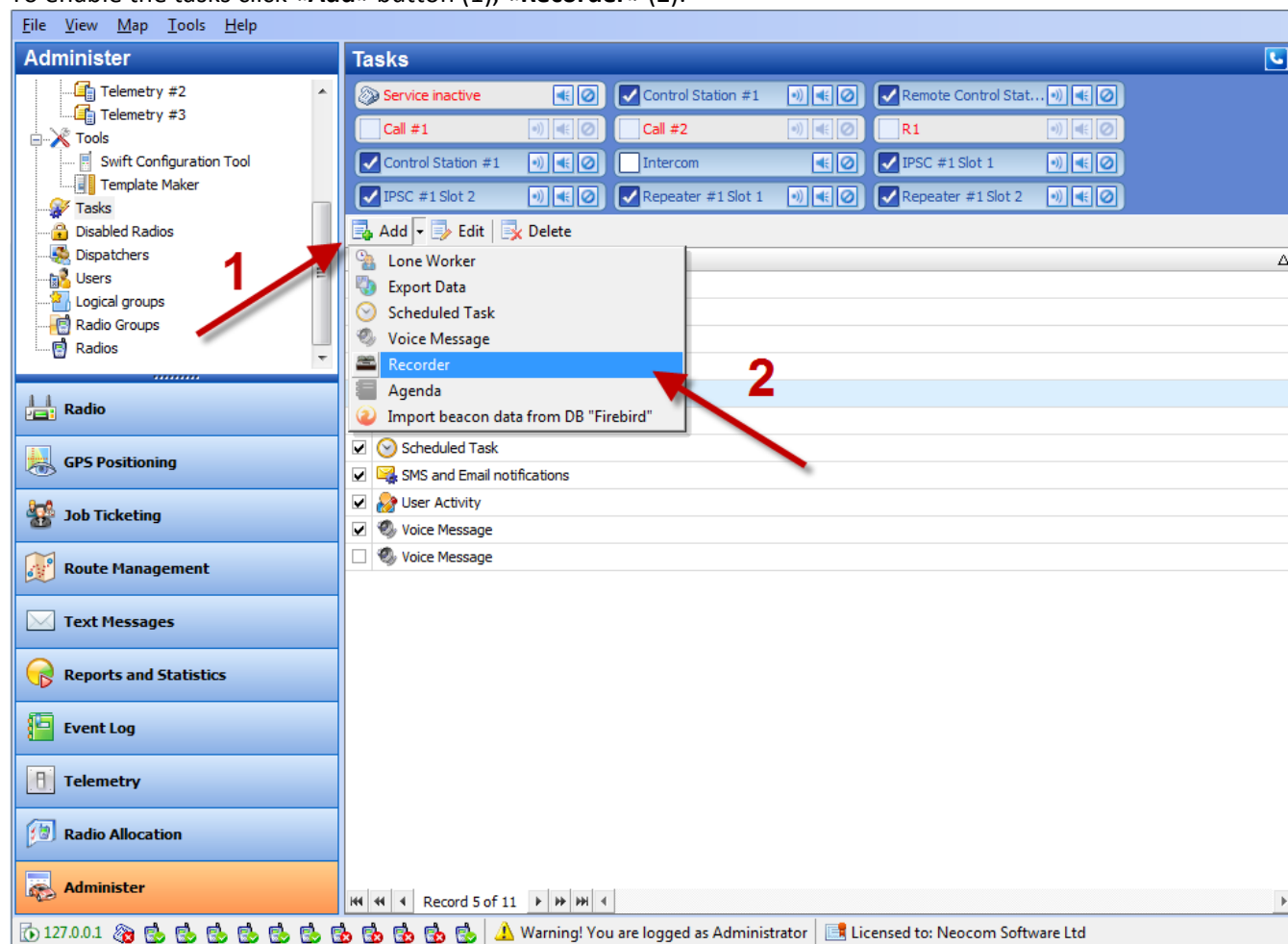
- **Task name** - specify the name to the task;
- **Outgoing folder (on server)** - specify the outgoing folder for the text message to be displayed in the Dispatch Console (e.g. **C:\Outgoing**);
- **Incoming folder (on server)** - specify the incoming folder for the reports (e.g. **C:\Incoming files**);
- **Wait for response** - specify the time interval for the response;
- **Text to confirm** - specify the text to be sent by the subscribers after they receive the message.

Audio Recorder for NetCRR

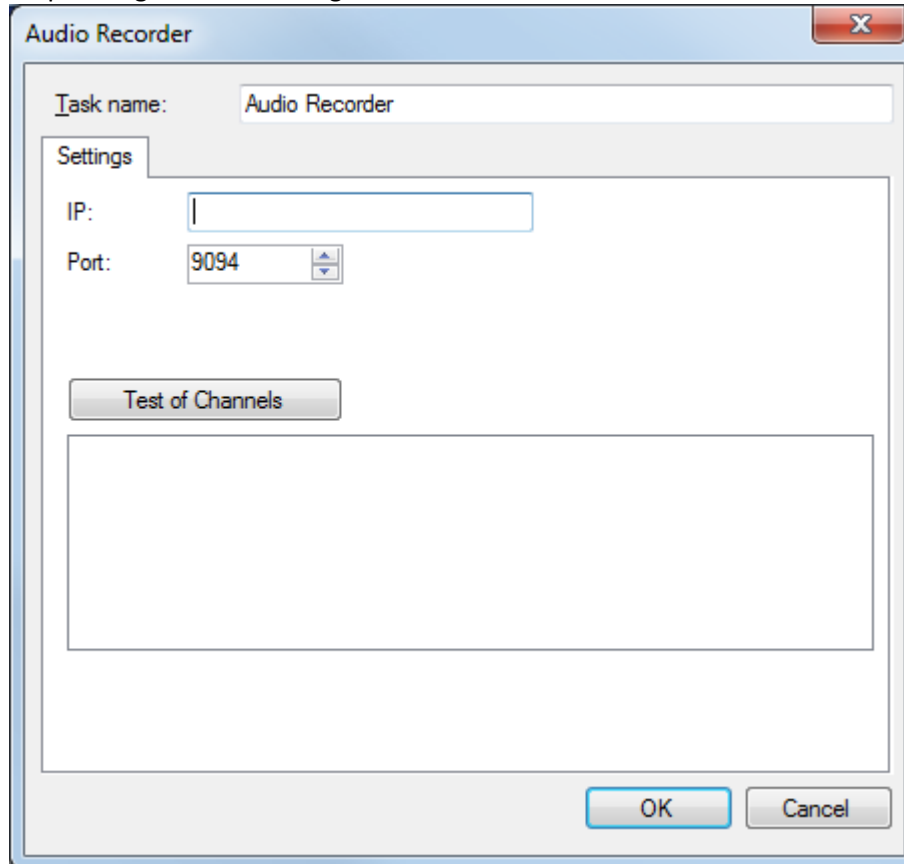
Audio recorder feature allows connect to audio recorder NetCRR Digital Call Recorder via IP.

For more details on NetCRR Digital Call Recorder read [User Manual](#):

To enable the tasks click «Add» button (1), «Recorder» (2):



The feature allows replicating audio recordings to the recorder:



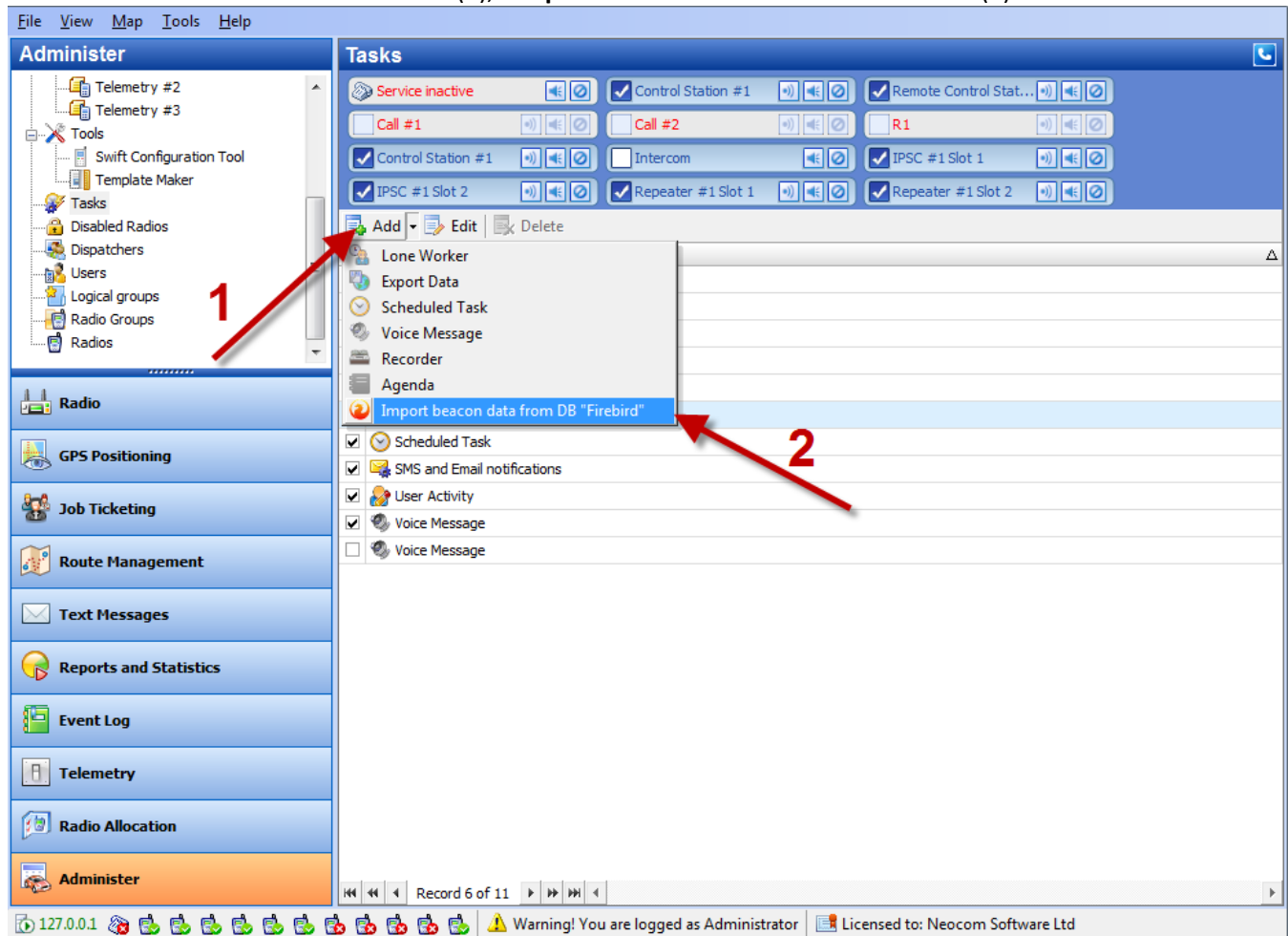
- **Task name** – specify a name for the task;
- **IP** – type in recorder's IP;
- **Port** – specify recorder's port.

Click «**Test of channels**» button to view all available channels on the recorder.
Click «**OK**» to add task.

Import Beacon Data from DB «Firebird»

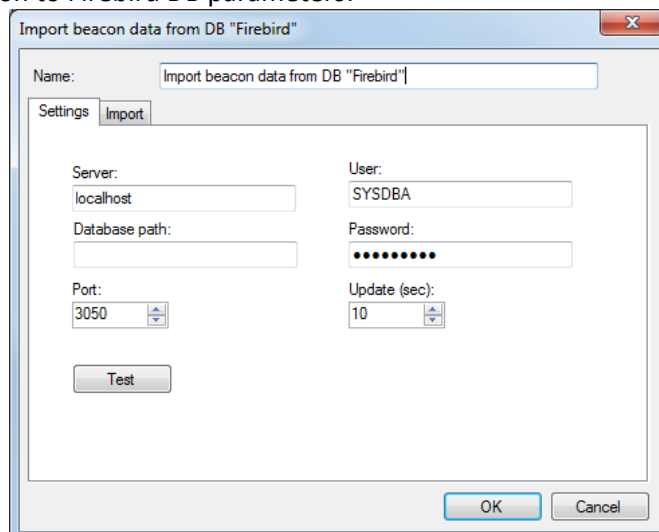
Import beacon data from DB «Firebird» option allows import beacon data from Firebird database to TRBOnet Dispatch Software database.

To enable the tasks click «Add» button (1), «Import beacon data from DB «Firebird» (2):



The screenshot shows the TRBOnet software interface. On the left is a sidebar with a tree view containing 'Telemetry #2', 'Telemetry #3', 'Tools' (with sub-items 'Swift Configuration Tool' and 'Template Maker'), 'Tasks', 'Disabled Radios', 'Dispatchers', 'Users', 'Logical groups', 'Radio Groups', and 'Radios'. Below this is a vertical menu with buttons for 'Radio', 'GPS Positioning', 'Job Ticketing', 'Route Management', 'Text Messages', 'Reports and Statistics', 'Event Log', 'Telemetry', 'Radio Allocation', and 'Administer'. The main window has a 'Tasks' section at the top with a grid of task controls. Below this is a list of tasks with an 'Add' button (indicated by red arrow 1). A dropdown menu is open from the 'Add' button, showing options: 'Lone Worker', 'Export Data', 'Scheduled Task', 'Voice Message', 'Recorder', 'Agenda', and 'Import beacon data from DB "Firebird"' (indicated by red arrow 2). The bottom status bar shows 'Record 6 of 11', a warning message 'Warning! You are logged as Administrator', and a license notice 'Licensed to: Neocom Software Ltd'.

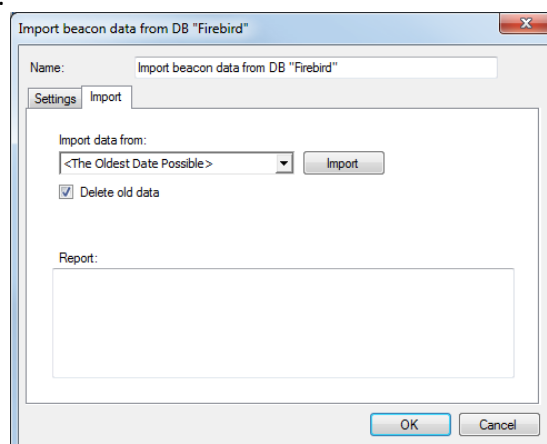
Settings – set mail connection to Firebird DB parameters:




- **Name** – specify a name for the task;
- **Server** – select remote server or server on the local PC;
- **User** – type in name of Firebird DB user;
- **Database path** – specify Firebird DB path;
- **Password** – specify a password to connect to Firebird DB (provided when login);
- **Port** – specify port to connect to Firebird DB;
- **Update (sec.)** – specify update period for Firebird DB;

Click  button to test the connection to Firebird DB.

Import – specify Import settings:



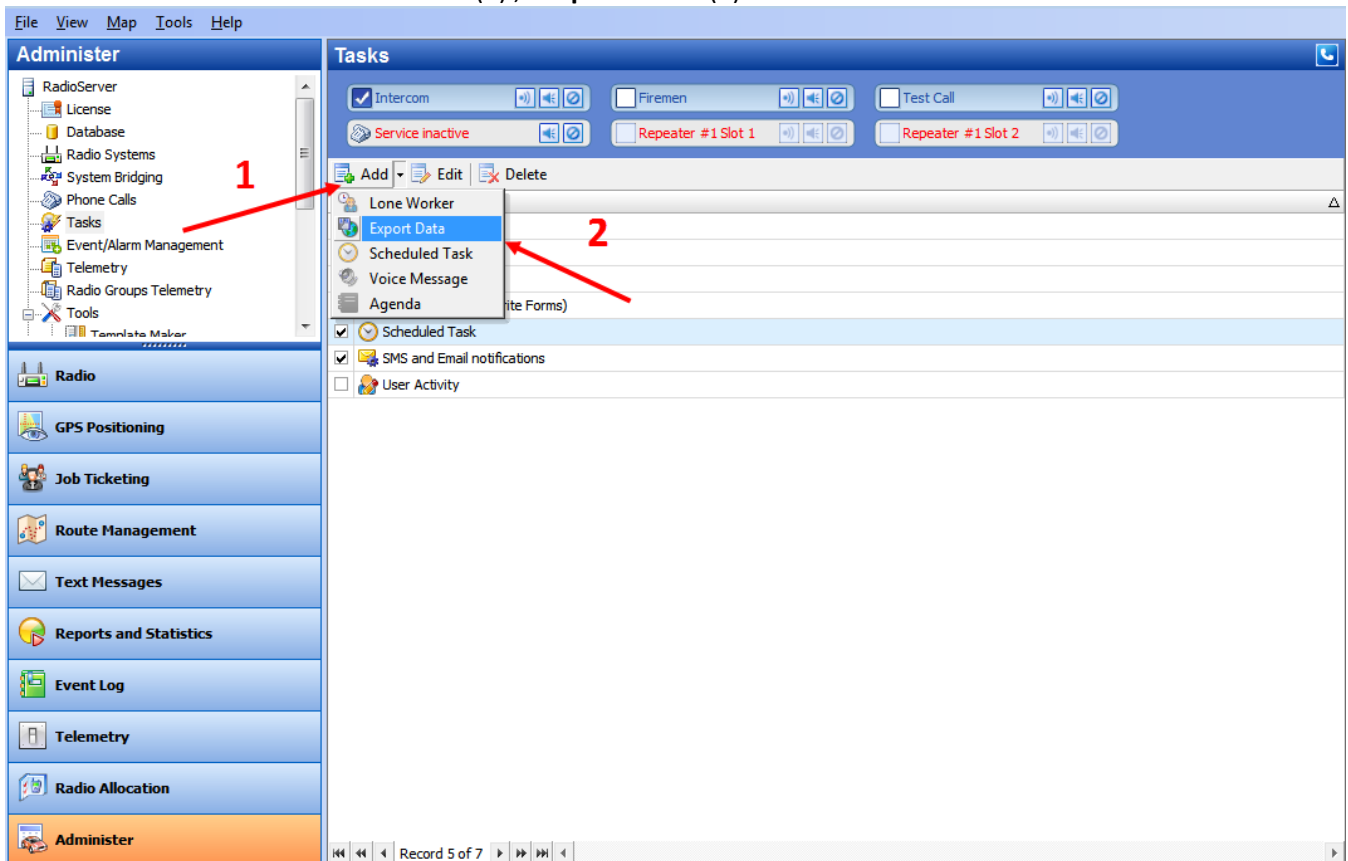
- **Import data from** – specify Firebird DB name;
- Click  button to import data;
- **Delete old data** – select to delete previous imported data from Firebird DB;
- **Report** – in the «Report» field import report will be displayed.

Click «OK» to add the task.

Export Data

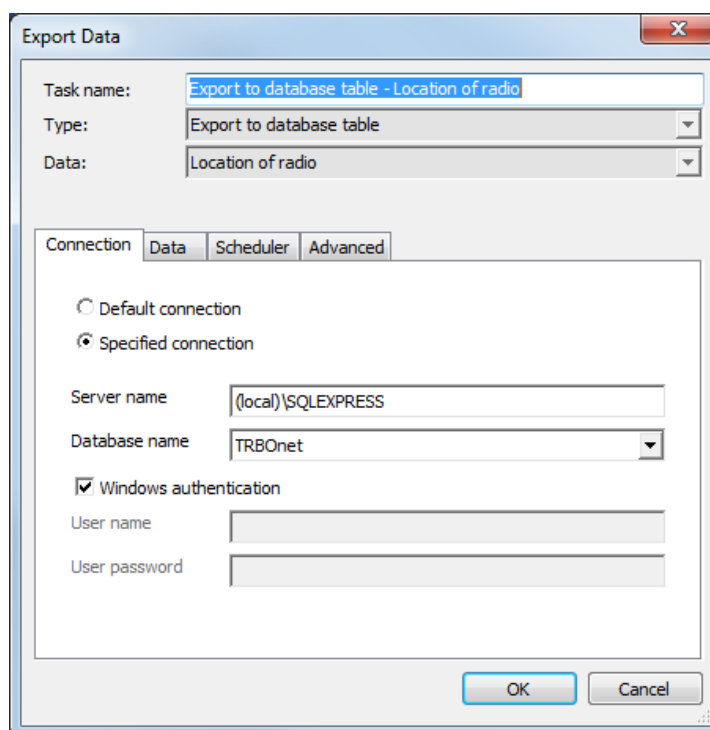
TRBOnet Dispatch Software provides the Export Data function, which allows export data to an external database table.

To enable the tasks click «Add» button (1) , «Export Data» (2):



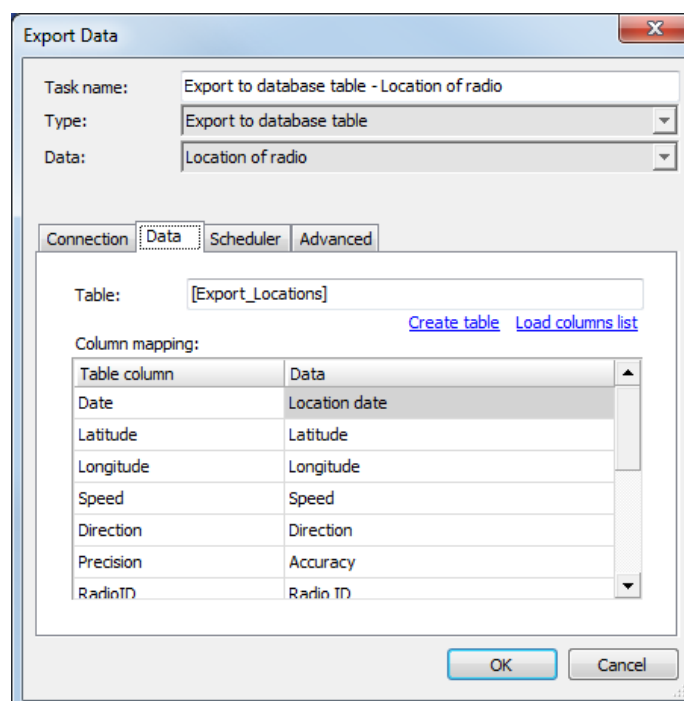
Connection – set the connection settings.

- **Task name** - specify the name to the task;
- **Type** – TRBOnet Dispatch Software allows export data for third-party systems using data export tasks. Select the type of data export in the dropdown list:
 - **Export to database table.** Allows setting export data to MS SQL Server tables. Specify connection to MS SQL Server parameters, database, base and table to export data.
 - **Export to Versa Trans.** Allows export data to data collection system Versa Trans via IP. For more details visit Versa Trans [official website](#).
 - **Export to Google.** Allows export data to file (file format is KML). For more details visit the following [website](#).
 - **Export to NMEA.** Allows export data to file (text file format, export format is NMEA 0183). For more details visit the following [website](#)
 - **Export to file.** Allows export data to text file.
- **Data** – select the data to export in the dropdown list;



- **Default connection** – select for default connection to SQL Server;
- **Specified connection** – select to specify SQL Server and database;
- **Server name** – specify SQL server name;
- **Database name** – select a database from the list;
- **Windows authentication** – select to use **Windows authentication** or unselect to use **SQL Server authentication** (SQL Server user name and password required).

- **Data** – specify a table and data types for export:



The 'Export Data' dialog box has tabs for 'Connection', 'Data', 'Scheduler', and 'Advanced'. The 'Data' tab is active. It contains the following fields:

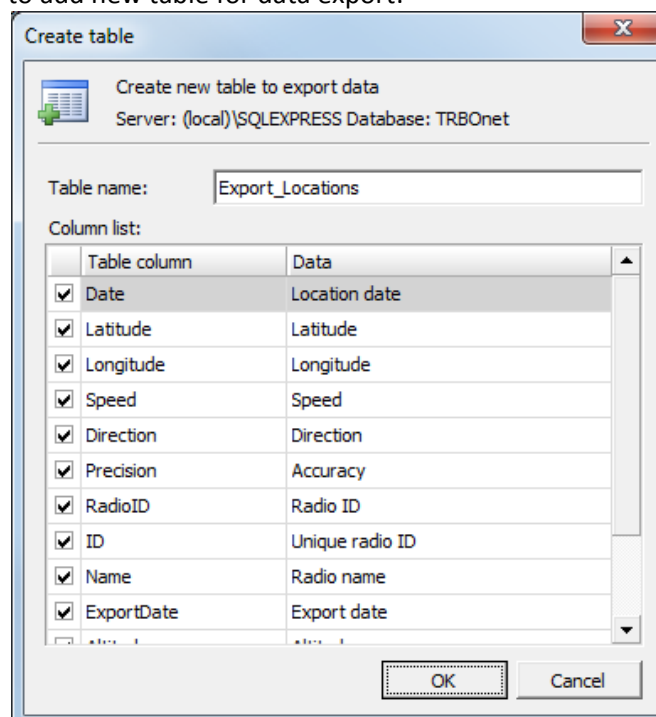
- Task name: Export to database table - Location of radio
- Type: Export to database table
- Data: Location of radio
- Table: [Export_Locations] (with links for 'Create table' and 'Load columns list')
- Column mapping table:

Table column	Data
Date	Location date
Latitude	Latitude
Longitude	Longitude
Speed	Speed
Direction	Direction
Precision	Accuracy
RadioID	Radio ID

Buttons: OK, Cancel

- **Table** – the name of the table to be exported into external database (by default the name of the table is created after you've specified it in Create table window).

Click «**Load columns list**» button to update the columns list in case you've made any changes in the table.
 Click «**Create table**» button to add new table for data export:



The 'Create table' dialog box shows the following information:

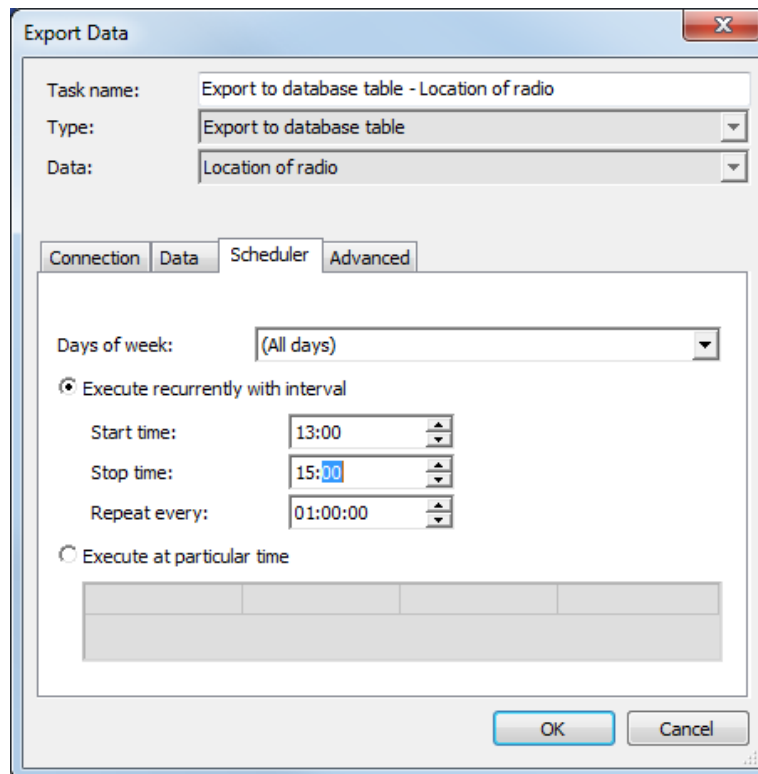
- Icon: Create new table to export data
- Server: (local)\SQLEXPRESS Database: TRBOnet
- Table name: Export_Locations
- Column list table:

	Table column	Data
<input checked="" type="checkbox"/>	Date	Location date
<input checked="" type="checkbox"/>	Latitude	Latitude
<input checked="" type="checkbox"/>	Longitude	Longitude
<input checked="" type="checkbox"/>	Speed	Speed
<input checked="" type="checkbox"/>	Direction	Direction
<input checked="" type="checkbox"/>	Precision	Accuracy
<input checked="" type="checkbox"/>	RadioID	Radio ID
<input checked="" type="checkbox"/>	ID	Unique radio ID
<input checked="" type="checkbox"/>	Name	Radio name
<input checked="" type="checkbox"/>	ExportDate	Export date

Buttons: OK, Cancel

Select data to add in the table and to export.

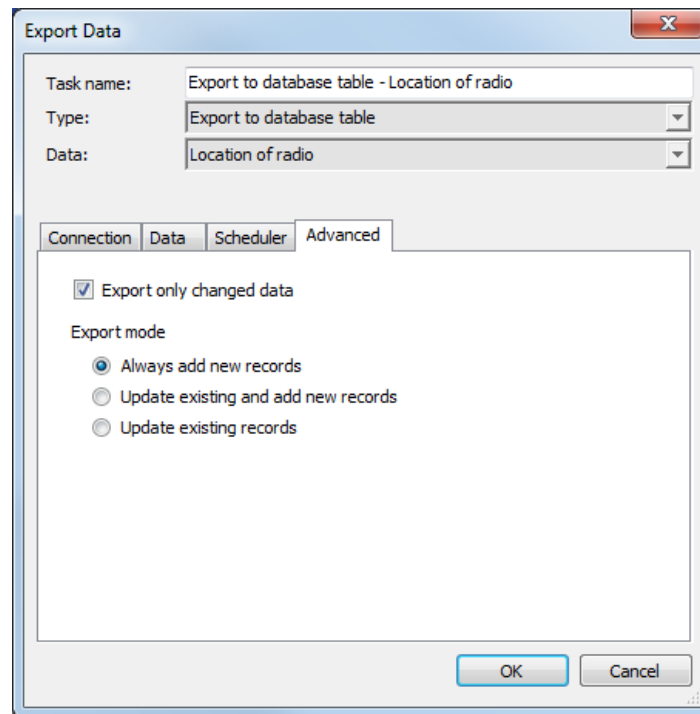
- **Scheduler** – set schedule settings for data export:



The image shows the 'Export Data' dialog box with the 'Scheduler' tab selected. The 'Task name' is 'Export to database table - Location of radio', 'Type' is 'Export to database table', and 'Data' is 'Location of radio'. Under the 'Scheduler' tab, 'Days of week' is set to '(All days)'. The 'Execute recurrently with interval' option is selected. The 'Start time' is 13:00, 'Stop time' is 15:00, and 'Repeat every' is 01:00:00. The 'Execute at particular time' option is unselected, and its corresponding table is empty. 'OK' and 'Cancel' buttons are at the bottom right.

- **Days of week** – select days of week to export the data;
- **Execute recurrently with interval** – select to set frequency of data export;
- **Start time** – specify time to start data export;
- **Stop time** - specify time to stop data export;
- **Repeat every** – specify time period to export data;
- **Execute at particular time** – select export time in columns of table below.

- **Advanced** – specify advanced settings for location of the radio:



The 'Export Data' dialog box is shown with the following settings:

- Task name:** Export to database table - Location of radio
- Type:** Export to database table
- Data:** Location of radio
- Advanced tab:**
 - ☒ Export only changed data
 - Export mode:**
 - ☒ Always add new records
 - ☐ Update existing and add new records
 - ☐ Update existing records

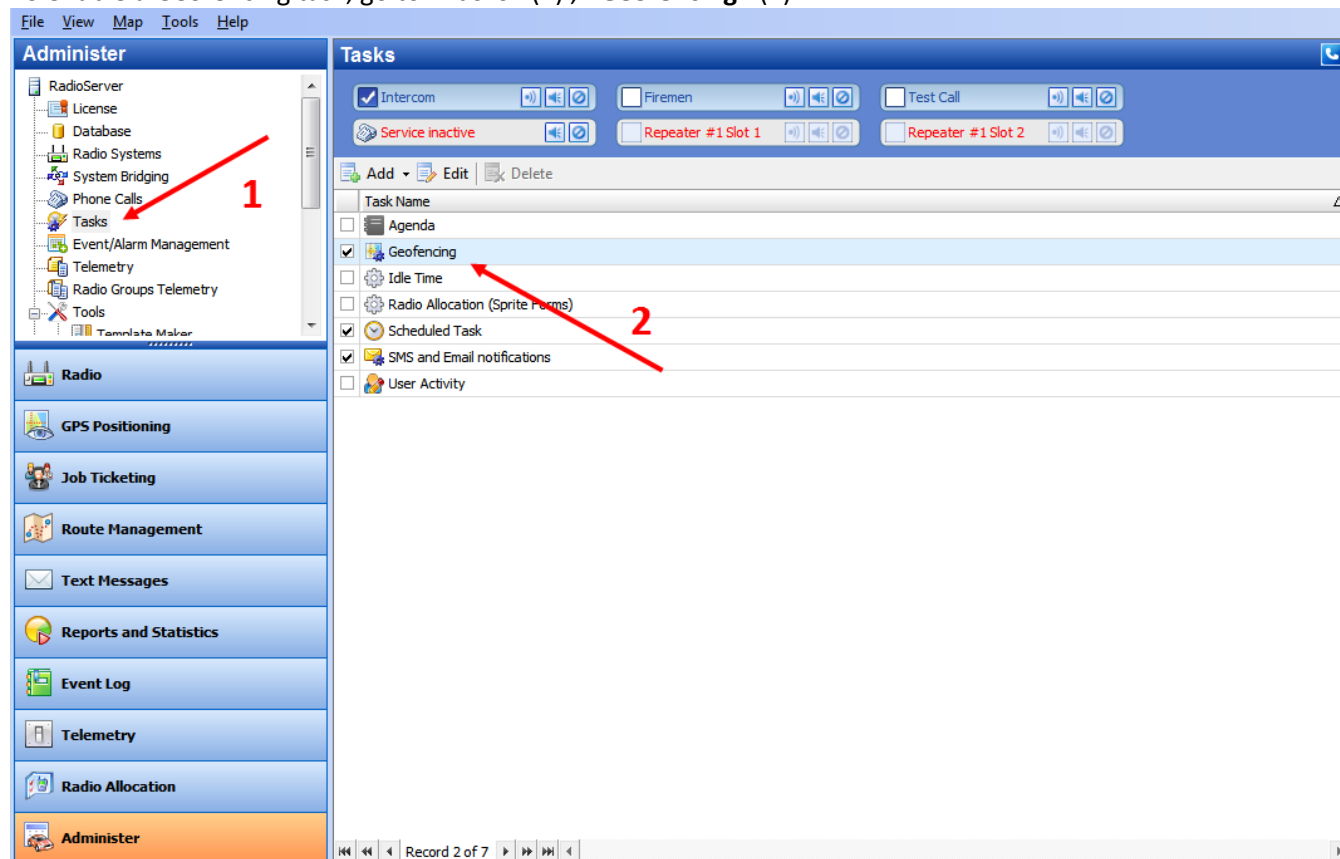
Buttons: OK, Cancel

- **Export only changed data** – select to export only changed location of the radio data.
- **Export mode** - select updating existing and new records files.

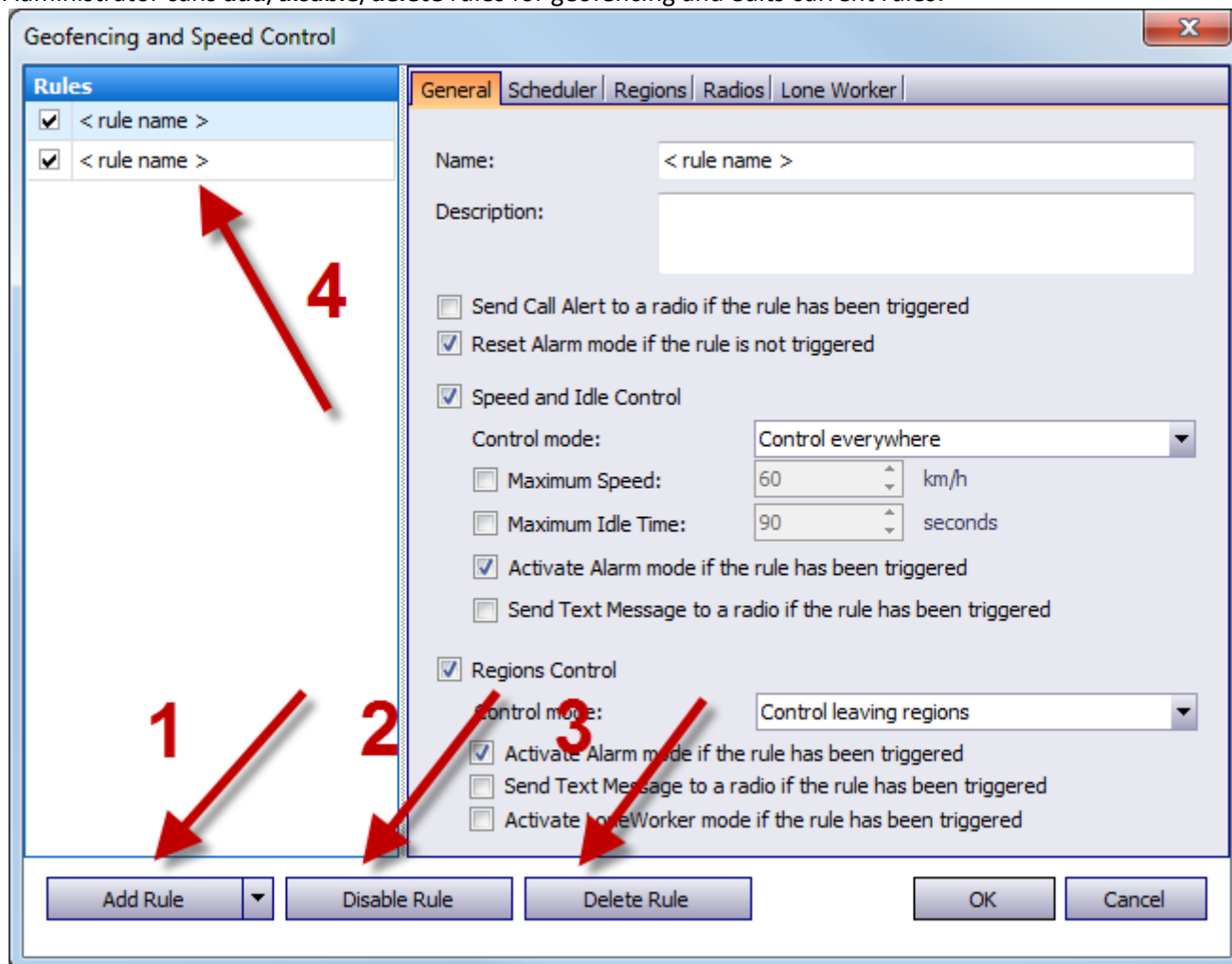
Geofencing

Geofencing allows to control location and speed of radios respectively to manually specified regions on a map. Geofencing monitoring consists of: manually configured regions and tasks. Regions specify where to use rules, tasks specify how to rules for the regions and radios.

To enable a Geofencing task, go to «**Tasks**» (1) , «**Geofencing**» (2):



Administrator can **add/disable/delete** rules for geofencing and edits current rules:



Geofencing and Speed Control

Rules

- ☒ < rule name >
- ☒ < rule name >

General | Scheduler | Regions | Radios | Lone Worker

Name: < rule name >

Description:

☐ Send Call Alert to a radio if the rule has been triggered

☒ Reset Alarm mode if the rule is not triggered

☒ Speed and Idle Control

Control mode: Control everywhere

☐ Maximum Speed: 60 km/h

☐ Maximum Idle Time: 90 seconds

☒ Activate Alarm mode if the rule has been triggered

☐ Send Text Message to a radio if the rule has been triggered

☒ Regions Control

Control mode: Control leaving regions

☒ Activate Alarm mode if the rule has been triggered

☐ Send Text Message to a radio if the rule has been triggered

☐ Activate Lone Worker mode if the rule has been triggered

Add Rule | Disable Rule | Delete Rule | OK | Cancel

- Click «**Add Rule**» button (1) and select the appropriate rule in the dropdown list to add a rule in current geofencing configuration. New rule is displayed in the list of rules (4).
- Click «**Disable rule**» button (2) to disable selected rule.
- Click «**Delete rule**» button (3) to delete selected rule.

Variable settings for geofencing rules of event types (Map Region, Beacons, Radios and Lone Worker) are represented in the table below:

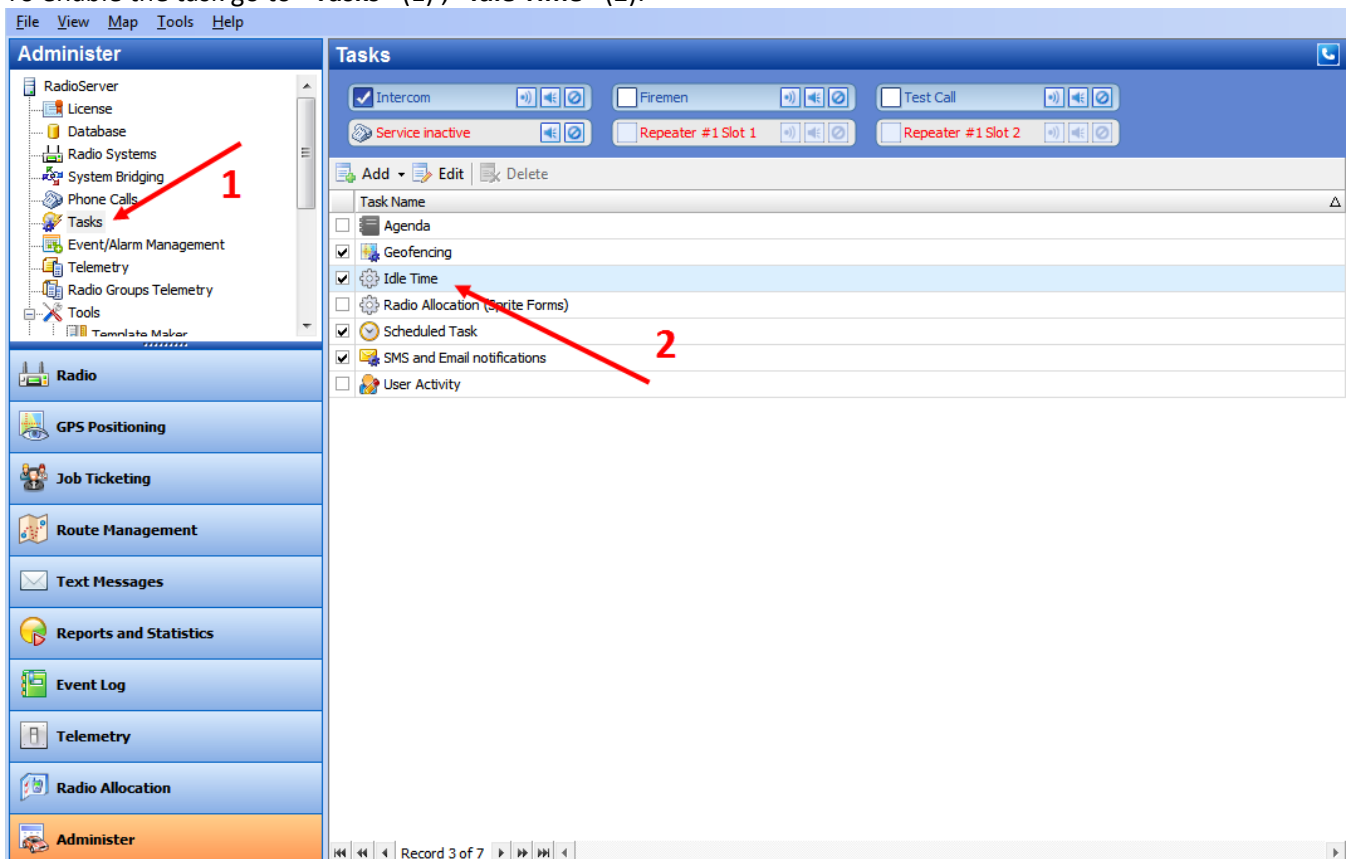
Event type	Tab Name	Parameters Description
Common Settings	General	<ul style="list-style-type: none"> • Name – specify the rule's name; • Description – add the rule's description;
	Scheduler	<ul style="list-style-type: none"> • Perform the rule on a schedule - click to start scheduler for geofencing rules; • Days of week - select the days to activate the geofencing rule; • Start time - set the time to start the rule; • Stop time - set the time to stop the rule.
	Radios	<ul style="list-style-type: none"> • All radios – select to apply this rule for all radios; • Only selected radios – select to apply the rule for one or several radios; • Select all – click to select all radios in the list; • Deselect all – click to deselect all radios in the list.
Map Region. Allows to configure rules when radio(s) enters or leaves configured map region(s).	General	<ul style="list-style-type: none"> • Regions Control – select to enable regions control; <ul style="list-style-type: none"> • Control mode – select the control mode for regions in the dropdown list; • Activate Alarm mode if the rule has been triggered – select to activate Alarm mode in the Dispatch Console if Regions Control rule has been triggered; • Send Text Message to a radio if the rule has been triggered – select to inform radio subscriber if Regions Control rule has been triggered; • Activate Lone Worker if the rule has been triggered – allows automatically activating a Lone Worker policy for a radio in case of entering or leaving exact region on map. Select to enable this option. • Speed and Idle Control – select to enable speed and idle control; <ul style="list-style-type: none"> • Control mode – select the control mode for speed and idle control in the dropdown list; • Maximum Speed – set the maximum speed for radio; • Maximum Idle Time – set the maximum idle time for radio; • Activate Alarm mode if the rule has been triggered – select to activate Alarm mode in the Dispatch Console if Speed and Idle Control rule has been triggered; • Send Text Message to a radio if the rule has been triggered – select to inform radio subscriber if Speed and Idle Control rule has been triggered; • Send Call Alert to a radio if the rule has been triggered – select to inform radio subscriber if the rule has been triggered; • Reset Alarm mode if the rule is not triggered - select to inform radio subscriber if the rule has not been triggered;
	Scheduler	See above
	Regions. Select regions to apply the rule	<ul style="list-style-type: none"> • All regions – select to apply this rule for all regions; • Only selected regions – select to apply the rule for one or several regions; • Select all – click to select all regions in the list; • Deselect all – click to deselect all regions in the list.
	Radios	See above
	Lone Worker. Enables Lone Worker when the rule has been triggered	<ul style="list-style-type: none"> • All Tasks – select to apply all tasks, configured by Administrator, when the rule has been triggered; • Only selected tasks – select to enable Lone Worker task, configured by Administrator when the rule has been triggered.

<p>Beacons. Allows to configure rules when beacon (s) enters or leaves coverage zone</p>	General	<ul style="list-style-type: none"> • Control mode: <ul style="list-style-type: none"> • Control entering beacon coverage zone – select to enable the rule when a radio enters beacon coverage zone; • Control leaving beacon coverage zone - select to enable the rule when a radio leaves beacon coverage zone; • Activate Alarm mode if the rule has been triggered - select to activate Alarm mode in the Dispatch Console if Beacons rule has been triggered; • Reset Alarm mode if the rule is not triggered – select to reset Alarm mode in the Dispatch Console automatically if the rule condition was not triggered (e.g., when «Control entering beacon coverage zone» selected and radio enters to the monitored coverage zone and then instantly leaves the zone, alarm mode in the Dispatch Console will be reseted automatically) • Send Call Alert to a radio if the rule has been triggered – select to inform radio subscriber if the rule has been triggered; • Send Text Message to a radio if the rule has been triggered – select to inform radio subscriber if Beacons rule has been triggered; • Activate Lone Worker if the rule has been triggered – allows automatically activating a Lone Worker policy for a radio in case of entering or leaving beacon coverage zone. Select to enable this option.
	Scheduler	See above
	Radios	See above
	<p>Beacons. Enables rule for selected beacons</p>	<ul style="list-style-type: none"> • All Beacons – select to apply this rule for all beacons; • Only selected beacons – select to apply the rule for one or several beacons.
	Lone Worker	See above.
<p>Radios. Allows use radio(s)1 as a map region and monitor when another radio(s) enters or leaves radio's coverage zone</p>	General	<ul style="list-style-type: none"> • Control mode: <ul style="list-style-type: none"> • Control Entering Region – select to enable the rule when a radio enters the coverage zone associated with another radio; • Control Leaving Regions - select to enable the rule when a radio leaves the coverage zone associated with another radio; • Activate Alarm mode if the rule has been triggered - select to activate Alarm mode in the Dispatch Console if Radios rule has been triggered; • Reset Alarm mode if the rule is not triggered – select to reset Alarm mode in the Dispatch Console automatically if the rule condition was not triggered (e.g., when «Control Entering Region» selected and radio enters to the monitored coverage zone and then instantly leaves the zone, alarm mode in the Dispatch Console will be reseted automatically) • Send Text Message to a radio if the rule has been triggered – select to inform radio subscriber if Radios rule has been triggered; • Send Call Alert to a radio if the rule has been triggered – select to inform radio subscriber if the rule has been triggered; • Minimum distance between radios – select a distance in meters. When the distance less than selected value, the rule will be triggered according to settings above. • Color of region – select radio coverage zone color.
	Scheduler	See above
	Regions	Select radio coverage zones the rule is applied for.
	Radios	See above

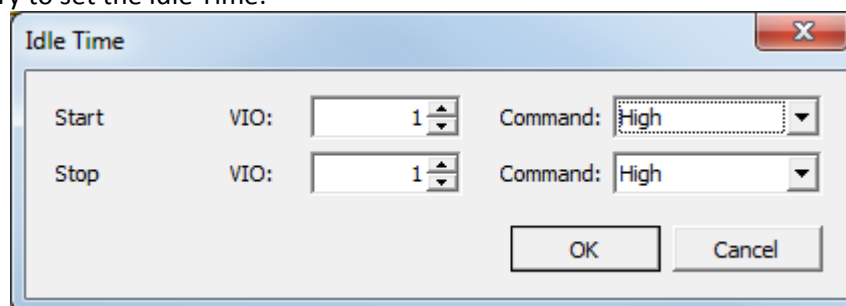
Lone Worker. Allows configure scheduled Lone Worker task	General	<ul style="list-style-type: none"> • Days of week - select the days to activate the Lone Worker rule; • Start time - set the time to start the rule; • Stop time - set the time to stop the rule.
	Radios	See above
	Lone Worker	Select all configured by Administrator Lone Worker tasks or several configured tasks. When Lone Worker task is mentioned as «Disabled», Administrator should enable the task.

Idle Time

Idle Time feature allows monitor vehicles idle time assigning Telemetry Commands on selected VIOs.
 To enable the task go to «Tasks» (1) , «Idle Time» (2):



Specify the telemetry to set the Idle Time:



Start:

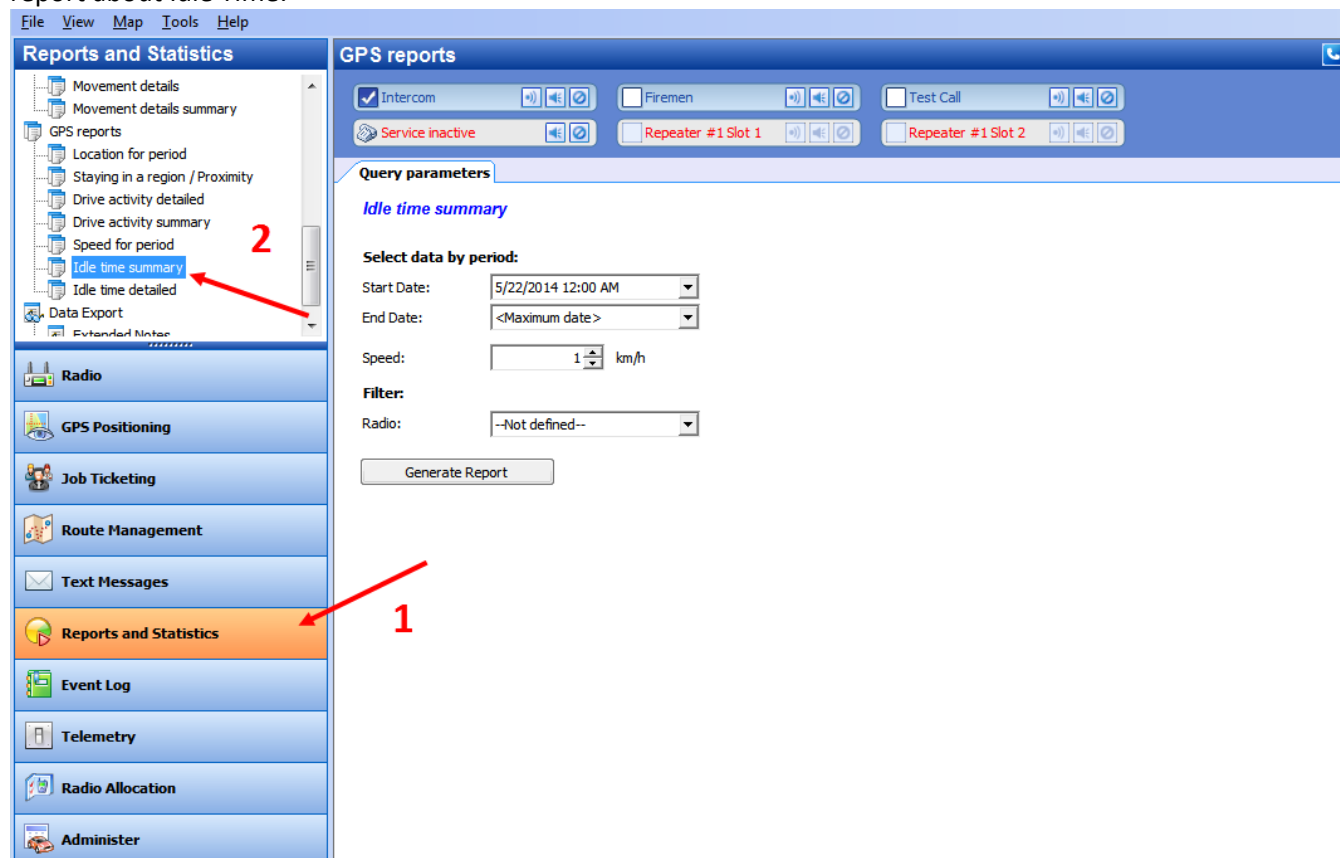
- Specify the telemetry **VIO** and **command** to start the Idle Time;

Stop:

- Specify the telemetry **VIO** and **command** to stop the Idle Time.

Administrator can see Idle Time reports and statistics.

Go to «**Reports and Statistics**» (1) and select **Idle Time summary** or **Idle Time detailed** (2) to see the common report about Idle Time:



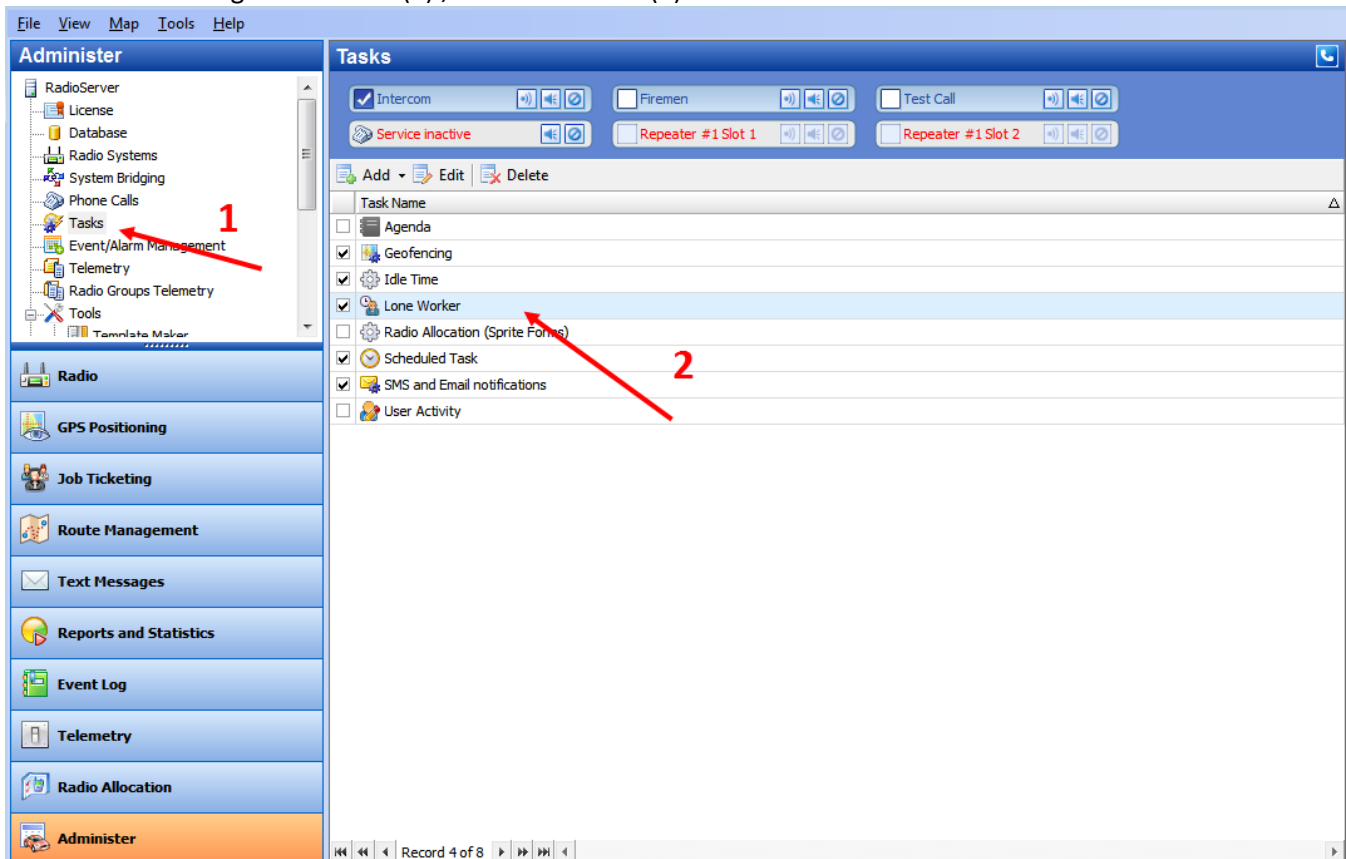
The screenshot shows the TRBOnet software interface. On the left is a sidebar menu with various options. A red arrow labeled '1' points to the 'Reports and Statistics' option. The main area on the right is titled 'GPS reports' and contains a 'Query parameters' section. A red arrow labeled '2' points to the 'Idle time summary' option in the 'GPS reports' list. Below this, there are fields for 'Select data by period:', 'Start Date' (5/22/2014 12:00 AM), 'End Date' (<Maximum date>), 'Speed' (1 km/h), and 'Filter' (Radio: --Not defined--). A 'Generate Report' button is at the bottom.

Note: specify speed accuracy value in «**Speed**» field.

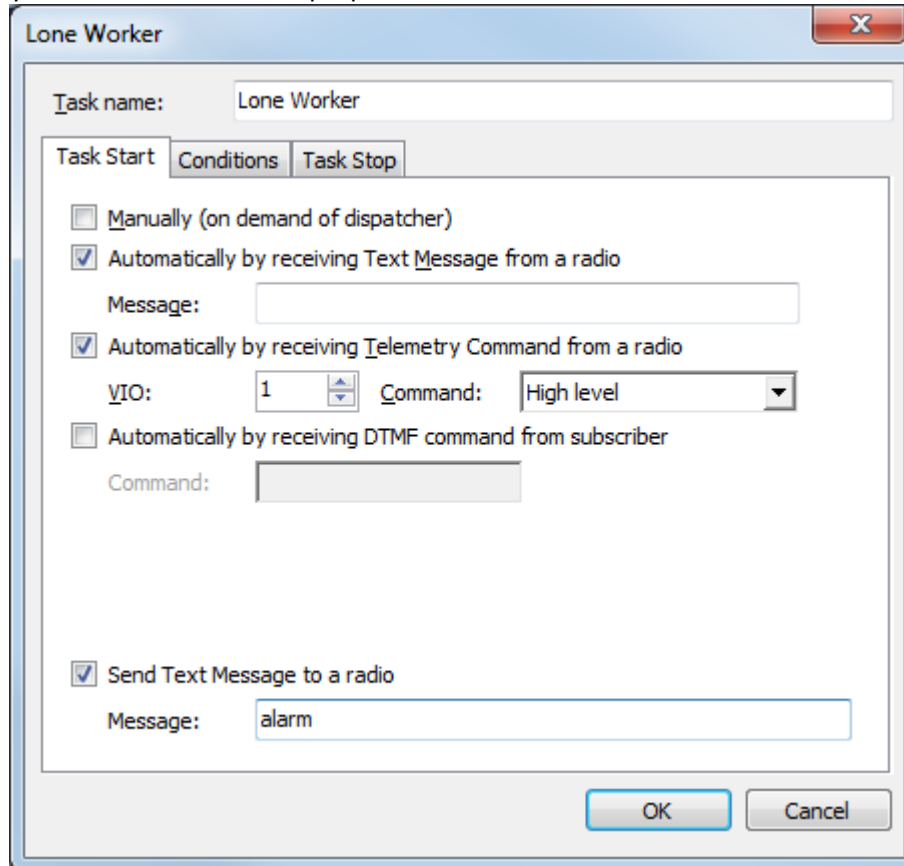
Lone Worker

The Lone Worker policy lets the Dispatcher set a time interval the communication with a subscriber is expected. For example, if a lone worker has not called the Dispatcher for 15 minutes, the radio receives a message and the Dispatcher receives an alarm signal.

To enable the task go to «**Tasks**» (1) , «**Lone Worker**» (2):

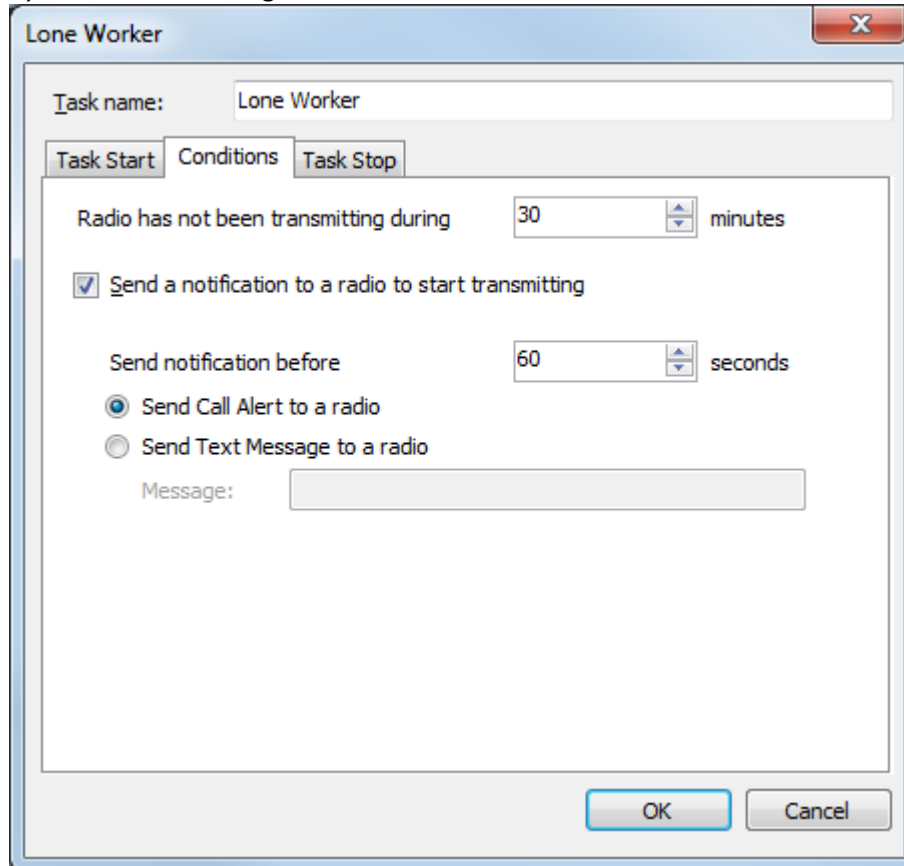


Task start – specify Lone Worker task start properties:



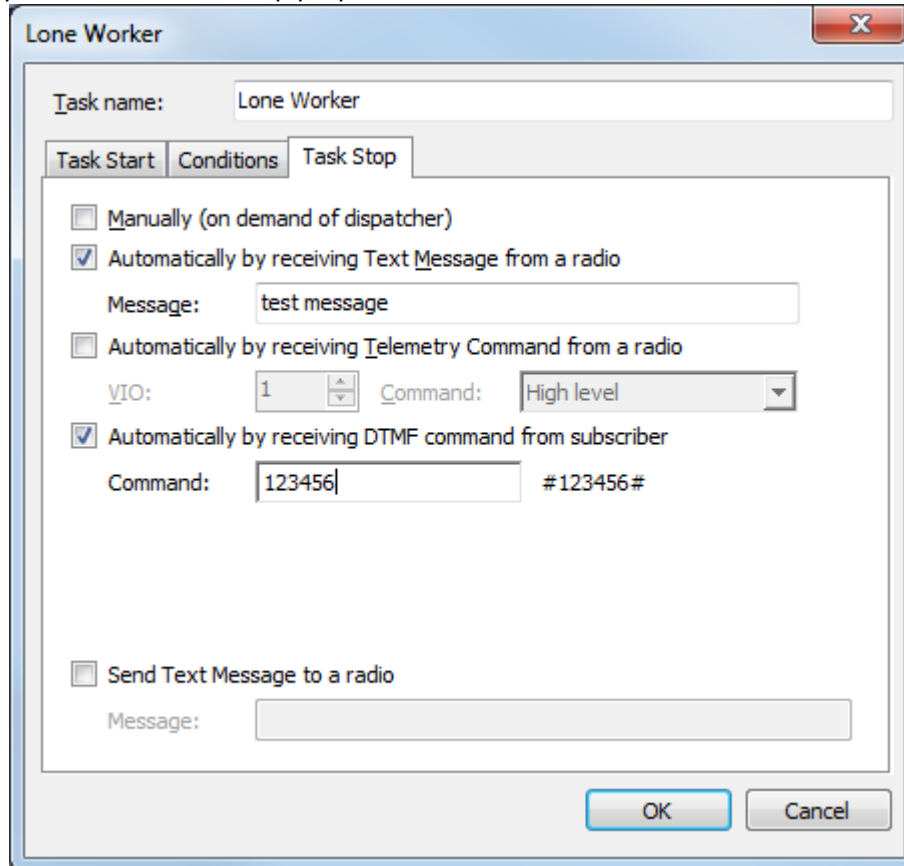
- **Manually (on demand of Dispatcher)** – select to start Lone Worker task manually;
- **Automatically by receiving Text Message from a radio** – select to start Lone Worker task after receiving a message (specify the message text in the **Message** field);
- **Automatically by receiving Telemetry Command from a radio** – select to start Lone Worker task after receiving telemetry. Specify **VIOs** (1 to 5) and the **Command**;
- **Automatically by receiving DTMF command from subscriber** – select to start Lone Worker task after receiving a predefined DTMF command (specify the command in the **Command** field).

Conditions – specify alarm mode settings for Lone Worker:



- **Radio has not been transmitting during ... minutes** – specify time period when radio do not transmit to enable Lone Worker policy;
- **Send a notification to a radio to start transmitting** – select to send notification to a radio before triggering the policy when a subscriber has not transmitted during selected time period;
- **Send notification before ... seconds** – set the time after the notification for the radio to respond before triggering the Lone Worker policy;
- **Send Call Alert to a radio** – select to send a call alert to a radio in case the policy has been triggered;
- **Send Text Message to a radio** – select to send a text message to a radio in case the policy has been triggered (specify the message text in the Message field).

Task stop - specify Lone Worker task stop properties:



Lone Worker

Task name: Lone Worker

Task Start Conditions Task Stop

☐ Manually (on demand of dispatcher)

☒ Automatically by receiving Text Message from a radio

Message: test message

☐ Automatically by receiving Telemetry Command from a radio

VIO: 1 Command: High level

☒ Automatically by receiving DTMF command from subscriber

Command: 123456 #123456#

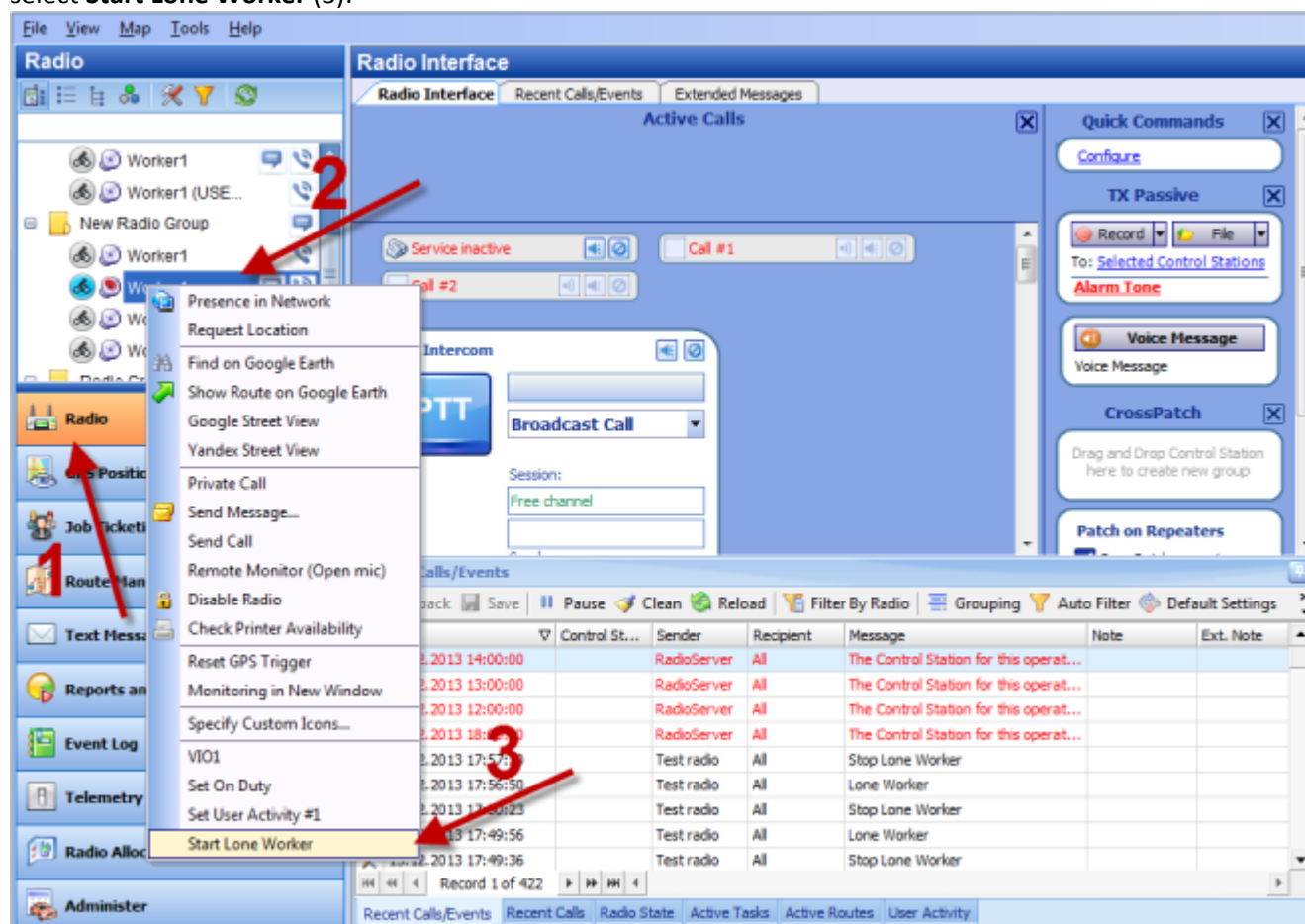
☐ Send Text Message to a radio

Message:

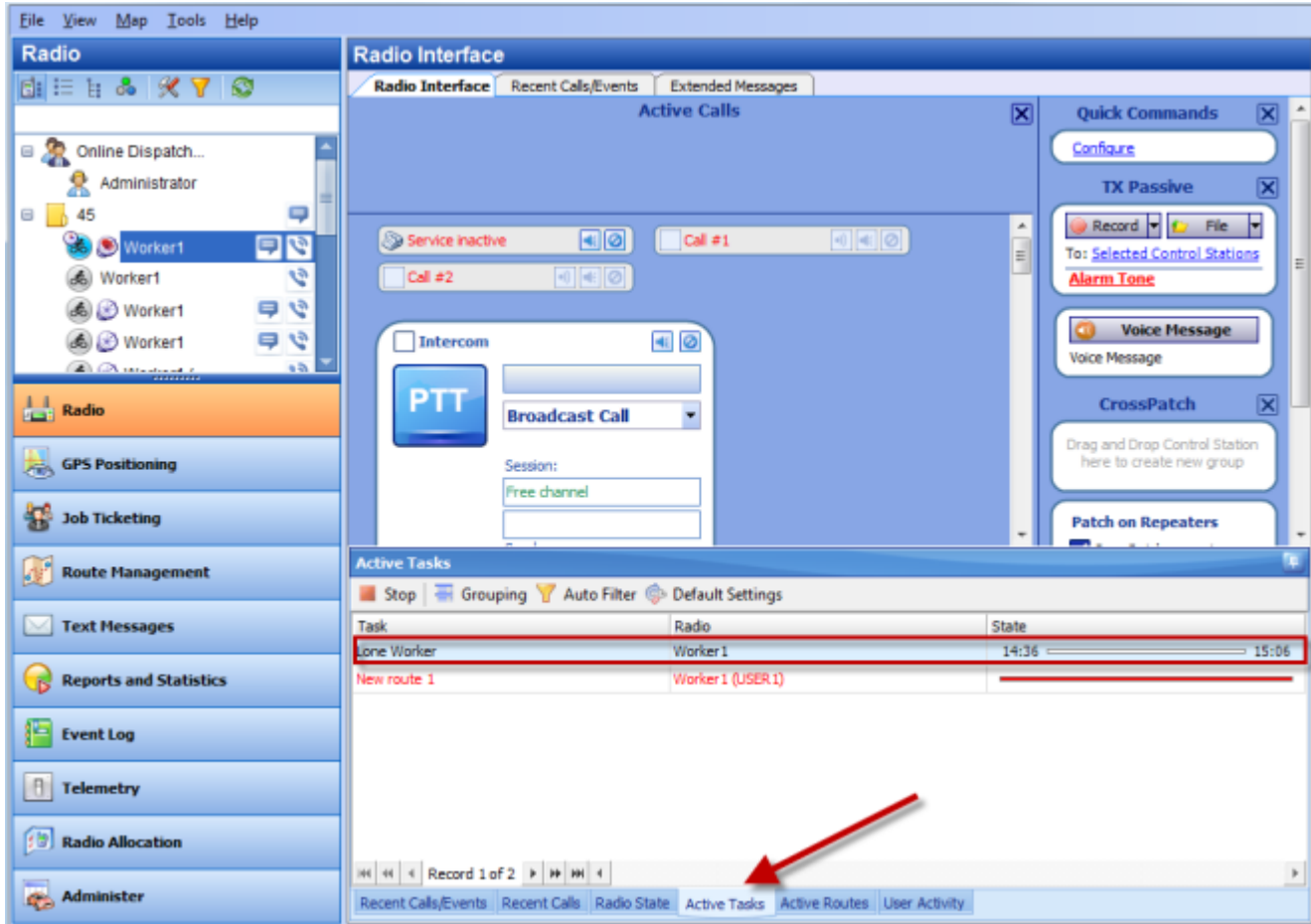
OK Cancel

- **Manually (on demand of Dispatcher)** – select to stop Lone Worker task manually;
- **Automatically by receiving Text Message from a radio** – select to stop Lone Worker task after receiving a message (specify the message text in the **Message** field);
- **Automatically by receiving Telemetry Command from a radio** – select to stop Lone Worker task after receiving telemetry. Specify **VIOs** (1 to 5) and the **Command**;
- **Automatically by receiving DTMF command from subscriber** – select to stop Lone Worker task after receiving a predefined DTMF command (specify the command in the **Command** field).

To enable Lone Worker feature for selected Radio go to **Radio** section (1), right-click selected radio (2) and select **Start Lone Worker** (3):



To monitor Lone Worker task go to Active Tasks tab:



Radio Interface

Active Calls

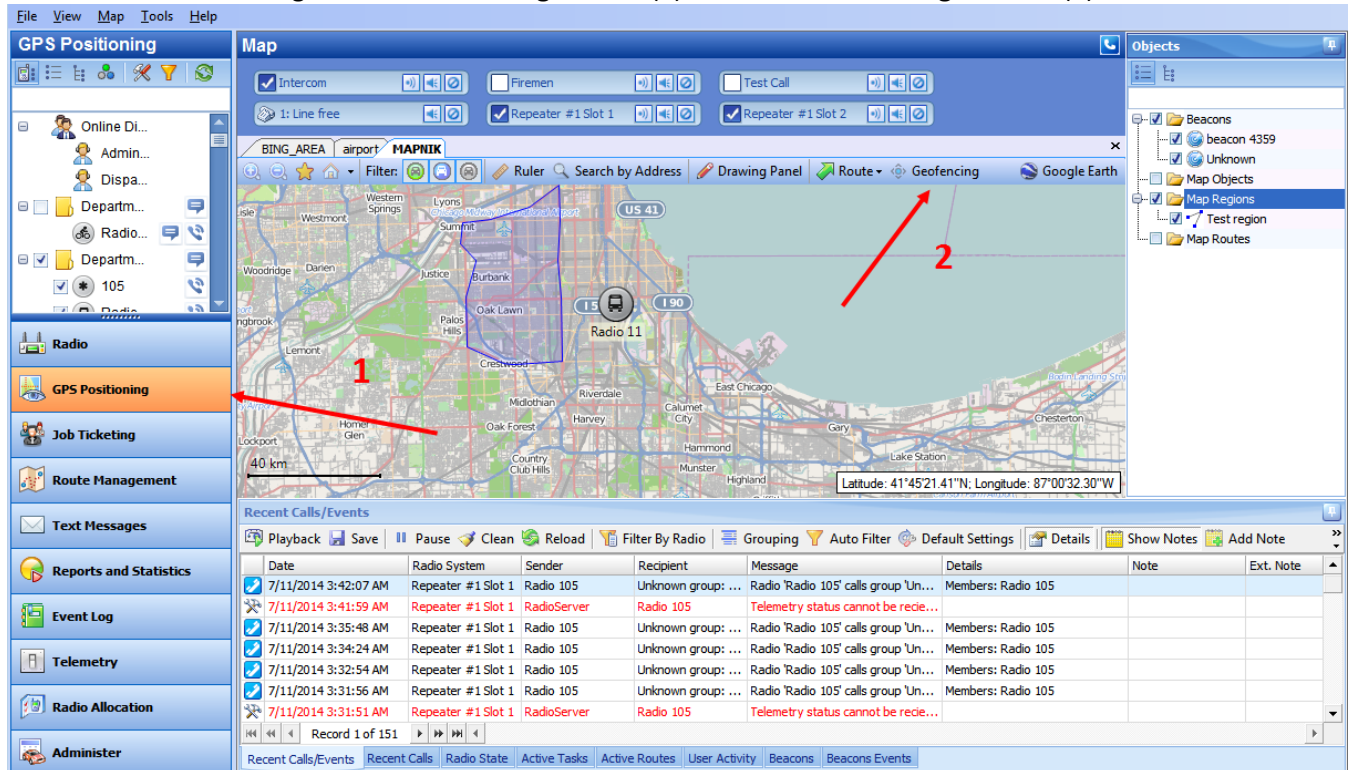
Service inactive | Call #1 | Call #2

Active Tasks

Task	Radio	State
Lone Worker	Worker 1	14:36 — 15:06
New route 1	Worker 1 (USER1)	

Recent Calls/Events | Recent Calls | Radio State | **Active Tasks** | Active Routes | User Activity

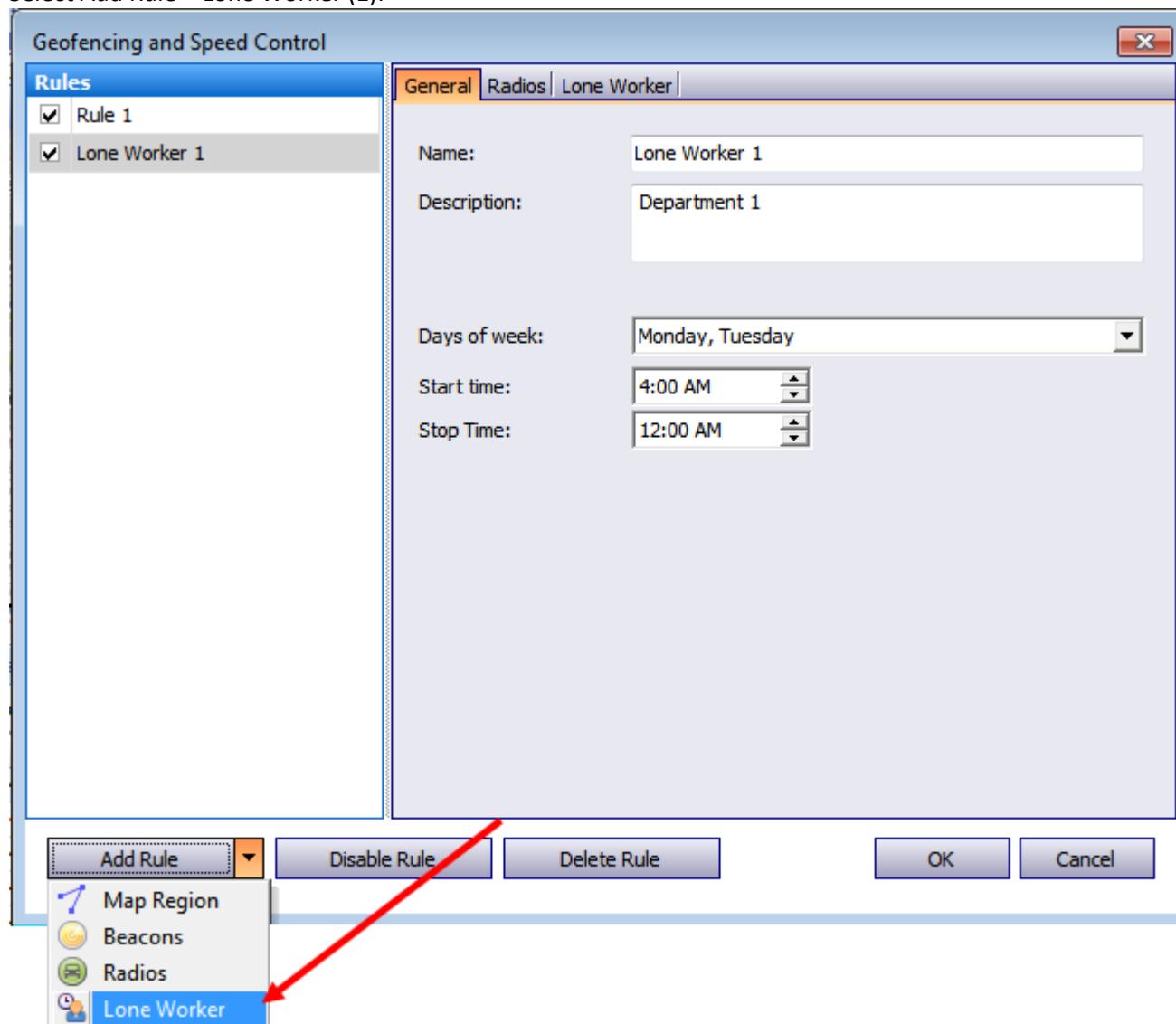
To enable Lone Worker go to **GPS Positioning** section (1) and click «**Geofencing**» button (2):



The screenshot shows the TRBOnet software interface. On the left sidebar, the 'GPS Positioning' section is highlighted with a red arrow labeled '1'. In the main map area, the 'Geofencing' button is highlighted with a red arrow labeled '2'. The map displays a city area with various landmarks and a scale bar indicating 40 km. Below the map, there is a 'Recent Calls/Events' table.

Date	Radio System	Sender	Recipient	Message	Details	Note	Ext. Note
7/11/2014 3:42:07 AM	Repeater #1 Slot 1	Radio 105	Unknown group: ...	Radio 'Radio 105' calls group 'Un...	Members: Radio 105		
7/11/2014 3:41:59 AM	Repeater #1 Slot 1	RadioServer	Radio 105	Telemetry status cannot be rede...			
7/11/2014 3:35:48 AM	Repeater #1 Slot 1	Radio 105	Unknown group: ...	Radio 'Radio 105' calls group 'Un...	Members: Radio 105		
7/11/2014 3:34:24 AM	Repeater #1 Slot 1	Radio 105	Unknown group: ...	Radio 'Radio 105' calls group 'Un...	Members: Radio 105		
7/11/2014 3:32:54 AM	Repeater #1 Slot 1	Radio 105	Unknown group: ...	Radio 'Radio 105' calls group 'Un...	Members: Radio 105		
7/11/2014 3:31:56 AM	Repeater #1 Slot 1	Radio 105	Unknown group: ...	Radio 'Radio 105' calls group 'Un...	Members: Radio 105		
7/11/2014 3:31:51 AM	Repeater #1 Slot 1	RadioServer	Radio 105	Telemetry status cannot be rede...			

Select Add Rule – Lone Worker (1):



Geofencing and Speed Control

Rules

- ☒ Rule 1
- ☒ Lone Worker 1

General | Radios | Lone Worker

Name: Lone Worker 1

Description: Department 1

Days of week: Monday, Tuesday

Start time: 4:00 AM

Stop Time: 12:00 AM

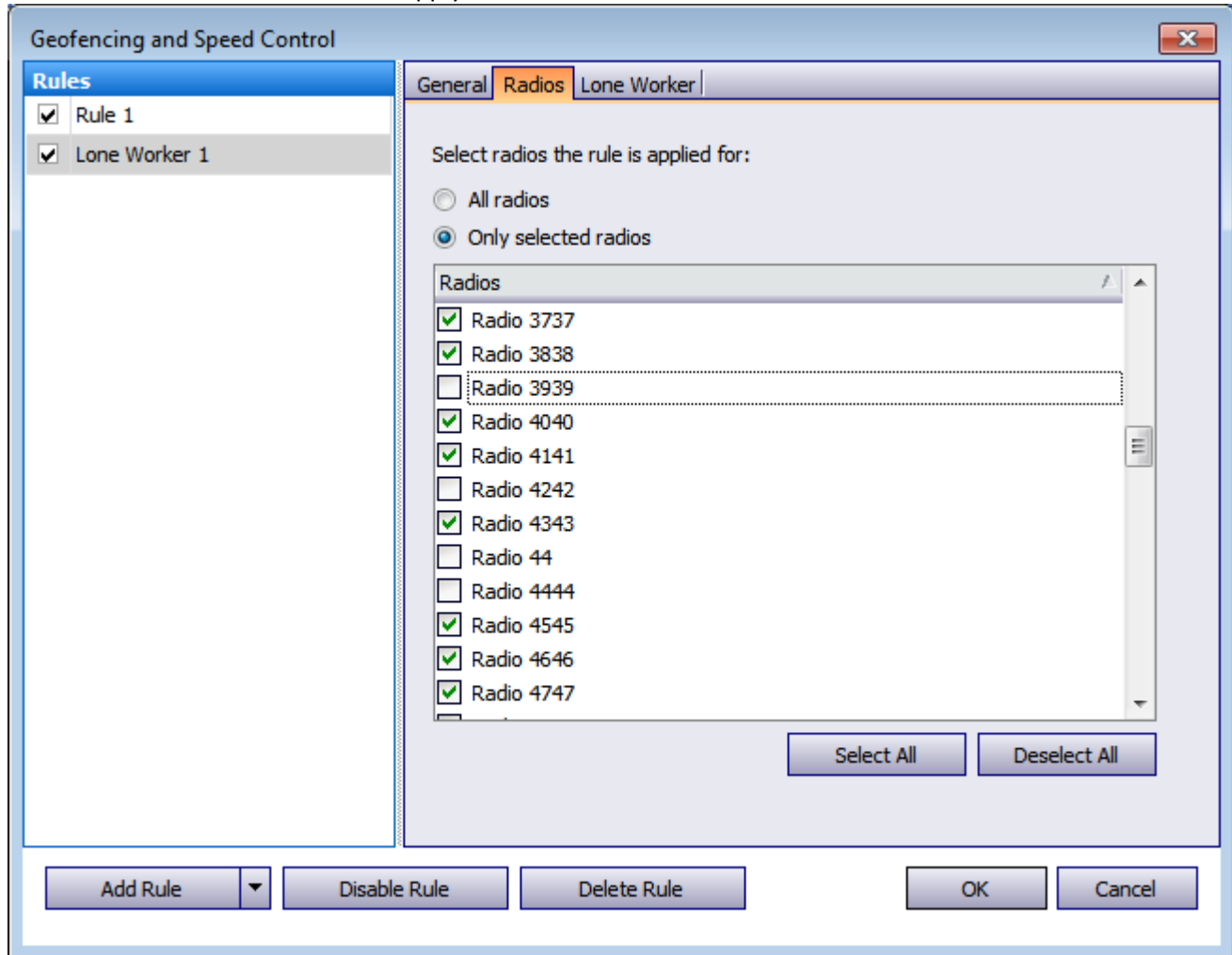
Buttons: Add Rule, Disable Rule, Delete Rule, OK, Cancel

Dropdown menu options: Map Region, Beacons, Radios, Lone Worker

Select Name for Lone Worker rule and add description.

- **Days of week** - select the days to activate the Lone Worker rule;
- **Start time** - set the time to start the rule;
- **Stop time** - set the time to stop the rule.

Go to Radios tab and add radios to apply Lone Worker rule:



Geofencing and Speed Control

Rules

- ☒ Rule 1
- ☒ Lone Worker 1

General Radios Lone Worker

Select radios the rule is applied for:

☐ All radios

☒ Only selected radios

Radios

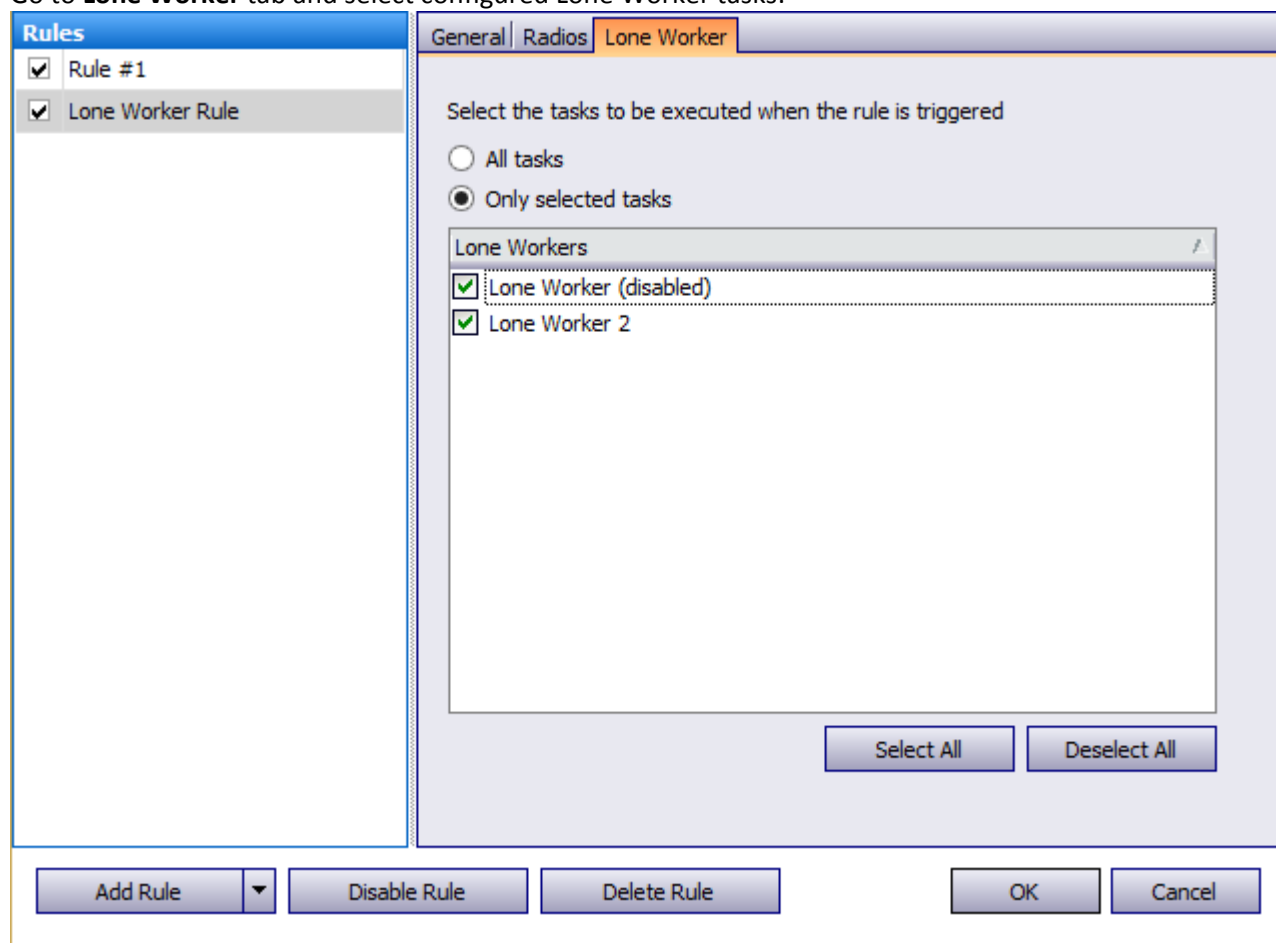
- ☒ Radio 3737
- ☒ Radio 3838
- ☐ Radio 3939
- ☒ Radio 4040
- ☒ Radio 4141
- ☐ Radio 4242
- ☒ Radio 4343
- ☐ Radio 44
- ☐ Radio 4444
- ☒ Radio 4545
- ☒ Radio 4646
- ☒ Radio 4747

Select All Deselect All

Add Rule **Disable Rule** **Delete Rule** **OK** **Cancel**

- **All radios** – select to apply this rule for all radios;
- **Only selected radios** – select to apply the rule for one or several radios;
- **Select all** – click to select all radios in the list;
- **Deselect all** – click to deselect all radios in the list.

Go to **Lone Worker** tab and select configured Lone Worker tasks:



Rules

- ☒ Rule #1
- ☒ Lone Worker Rule

General | Radios | Lone Worker

Select the tasks to be executed when the rule is triggered

☐ All tasks
☒ Only selected tasks

Lone Workers

- ☒ Lone Worker (disabled)
- ☒ Lone Worker 2

Select All Deselect All

Add Rule ▼ Disable Rule Delete Rule OK Cancel

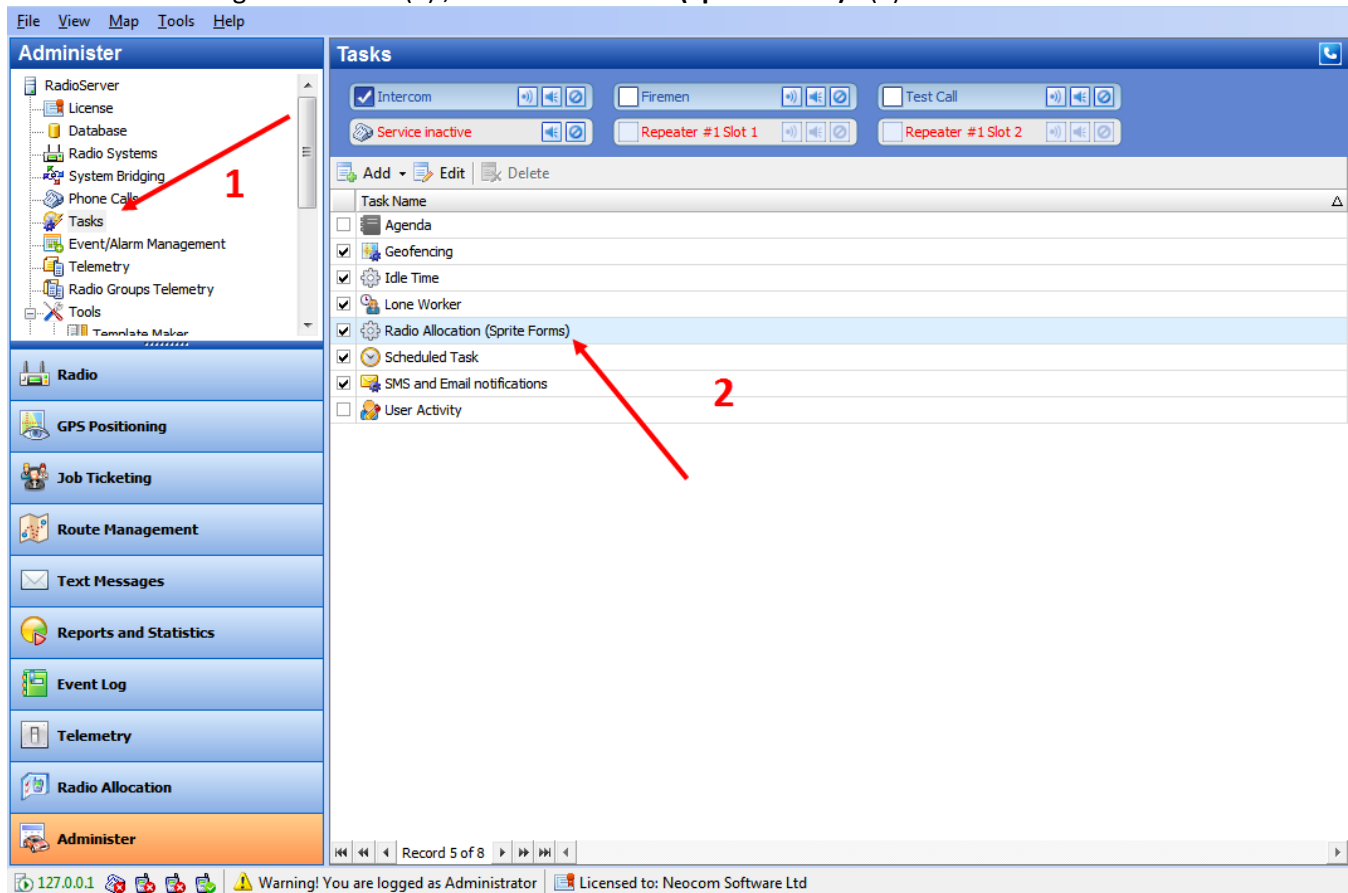
Select all configured Lone Worker tasks or several configured tasks.
 When Lone Worker task is mentioned as «**Disabled**», enable the task on **Tasks** page.

Radio Allocation (Sprite Forms)

This function is used for direct communication between the Dispatcher and the subscriber via special **Tallysman Option board** installed into the radio. Dispatcher and subscriber have special form templates. Dispatcher receives Duty ID of the subscriber with his template output form whereas the subscriber sends it using template input form. Radio name changes to its Duty ID.

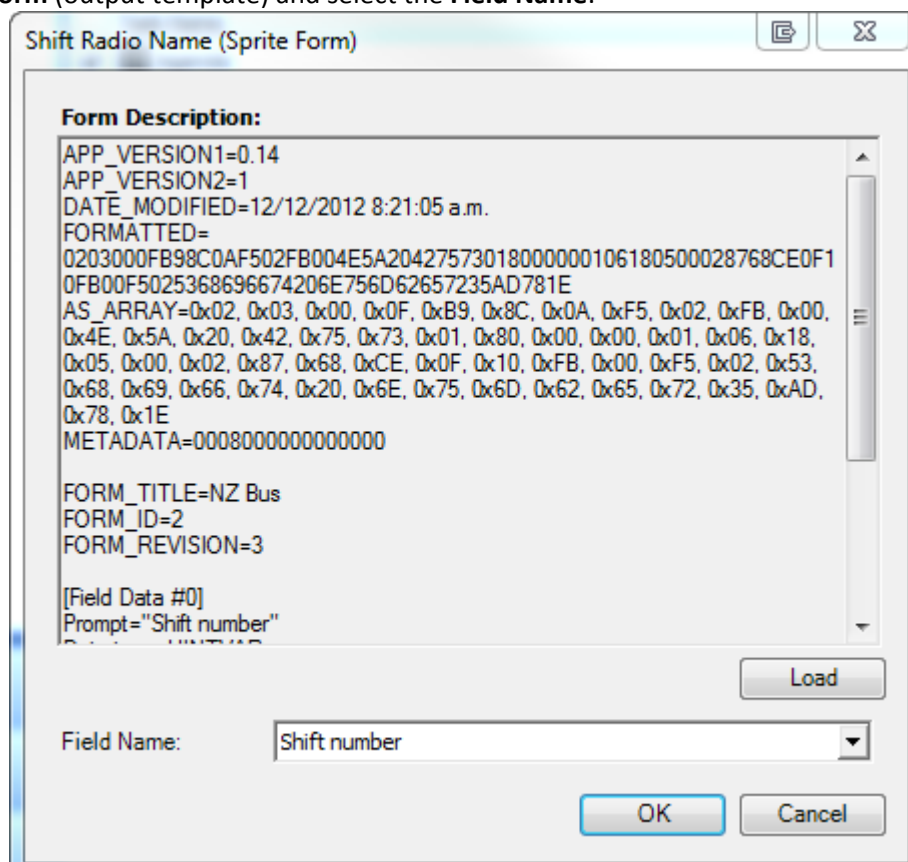
Note: any activity may be decoded with its Duty ID so it is the way to communicate for Dispatcher and subscribers only.

To enable the task go to «**Tasks**» (1) , «**Radio Allocation (Sprite forms)**» (2):



The screenshot shows the Neocom Software interface. On the left is a sidebar with a tree view under 'Administer' containing items like RadioServer, License, Database, Radio Systems, System Bridging, Phone Calls, Tasks, Event/Alarm Management, Telemetry, Radio Groups Telemetry, Tools, and Taminista Maker. Below this is a 'Radio' section with icons for GPS Positioning, Job Ticketing, Route Management, Text Messages, Reports and Statistics, Event Log, Telemetry, Radio Allocation, and Administer. The main window is titled 'Tasks' and contains a toolbar with 'Add', 'Edit', and 'Delete' buttons. Below the toolbar is a list of tasks with checkboxes: Agenda, Geofencing, Idle Time, Lone Worker, Radio Allocation (Sprite Forms), Scheduled Task, SMS and Email notifications, and User Activity. A red arrow labeled '1' points to the 'Tasks' menu item in the sidebar. Another red arrow labeled '2' points to the 'Radio Allocation (Sprite Forms)' task in the list. The status bar at the bottom shows 'Warning! You are logged as Administrator' and 'Licensed to: Neocom Software Ltd'.

Load the **Sprite Form** (output template) and select the **Field Name**:



Shift Radio Name (Sprite Form)

Form Description:

APP_VERSION1=0.14
 APP_VERSION2=1
 DATE_MODIFIED=12/12/2012 8:21:05 a.m.
 FORMATTED=0203000FB98C0AF502FB004E5A20427573018000000106180500028768CE0F10FB00F5025368696674206E756D62657235AD781E
 AS_ARRAY=0x02, 0x03, 0x00, 0x0F, 0xB9, 0x8C, 0x0A, 0xF5, 0x02, 0xFB, 0x00, 0x4E, 0x5A, 0x20, 0x42, 0x75, 0x73, 0x01, 0x80, 0x00, 0x00, 0x01, 0x06, 0x18, 0x05, 0x00, 0x02, 0x87, 0x68, 0xCE, 0x0F, 0x10, 0xFB, 0x00, 0xF5, 0x02, 0x53, 0x68, 0x69, 0x66, 0x74, 0x20, 0x6E, 0x75, 0x6D, 0x62, 0x65, 0x72, 0x35, 0xAD, 0x78, 0x1E
 METADATA=0008000000000000

FORM_TITLE=NZ Bus
 FORM_ID=2
 FORM_REVISION=3

[Field Data #0]
 Prompt="Shift number"

Load

Field Name: Shift number

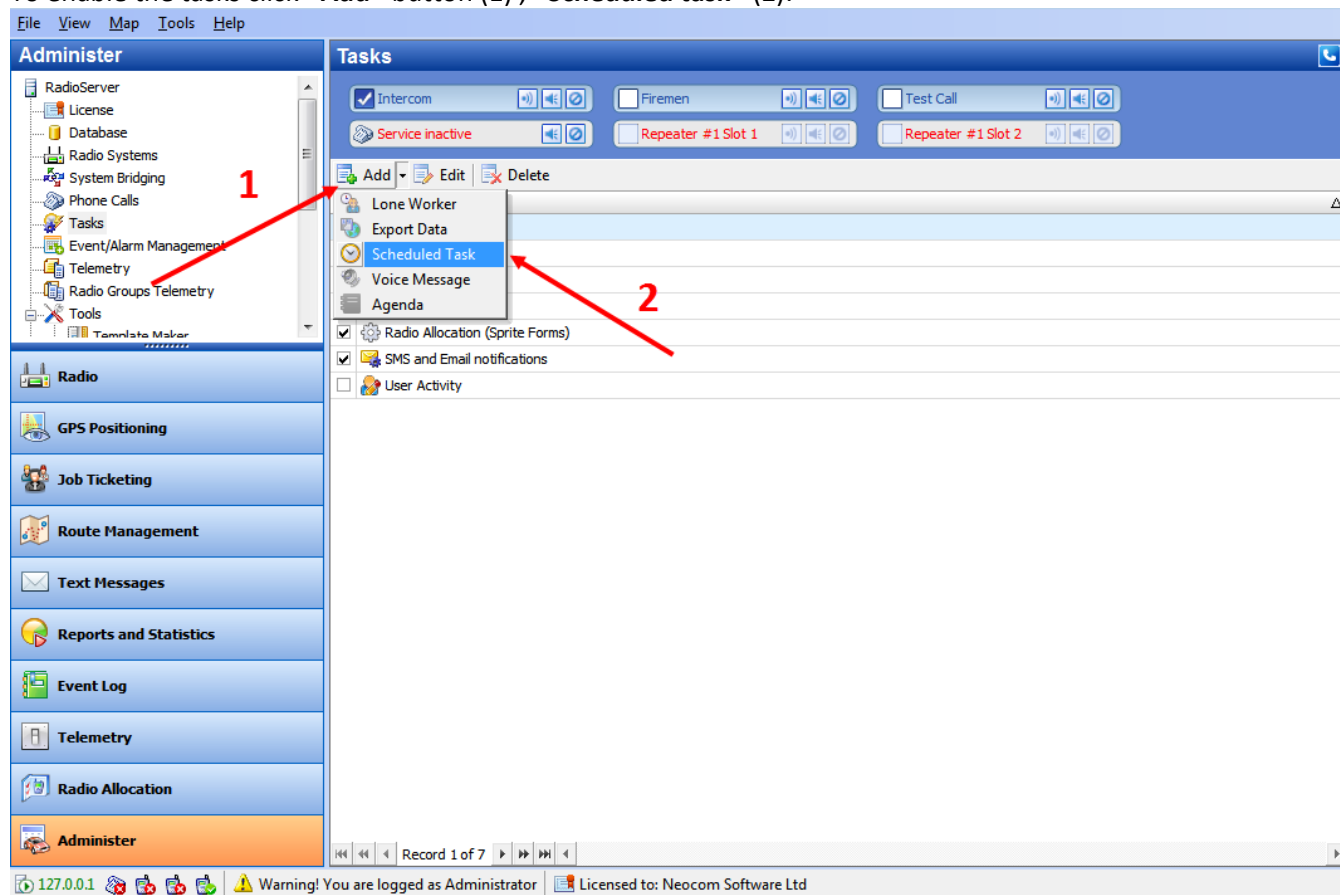
OK Cancel

Click «OK» to add a Sprite Form.

Scheduled Task

This function allows sending scheduled messages to radios.

To enable the tasks click «Add» button (1) , «Scheduled task» (2):

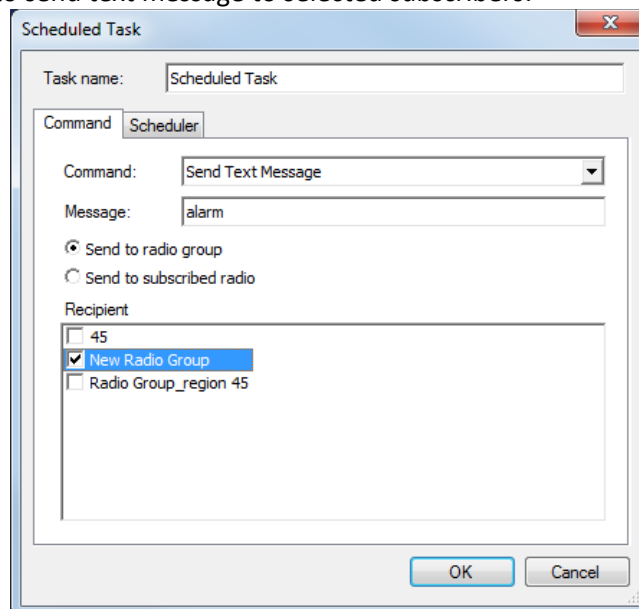


The screenshot shows the TRBOnet software interface. On the left is the 'Administer' sidebar with various menu items. The main window is titled 'Tasks' and contains a list of tasks with checkboxes and icons. A red arrow labeled '1' points to the 'Add' button in the 'Tasks' section. Another red arrow labeled '2' points to the 'Scheduled Task' option in the dropdown menu that appears when the 'Add' button is clicked.

Task name – specify a name for the task.

Command – specify a command for scheduled task.

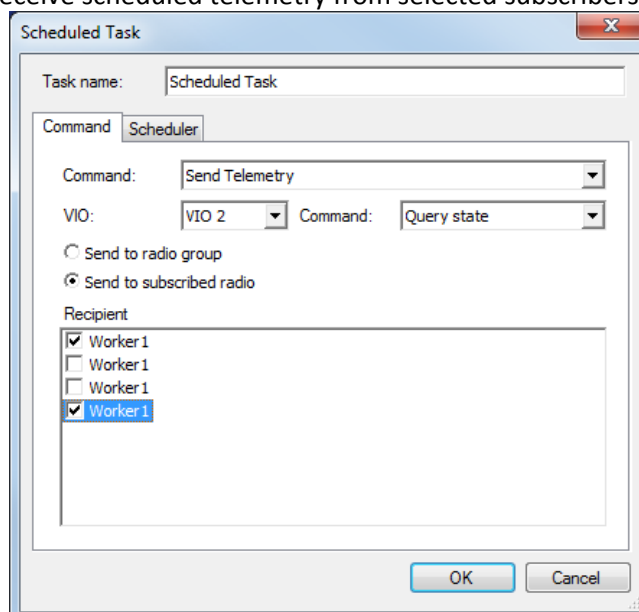
Send text message – select to send text message to selected subscribers:



The screenshot shows the 'Scheduled Task' dialog box with the 'Scheduler' tab selected. The 'Task name' field contains 'Scheduled Task'. The 'Command' dropdown is set to 'Send Text Message'. The 'Message' field contains 'alarm'. The 'Send to radio group' radio button is selected. The 'Recipient' list shows three items: '45' (unchecked), 'New Radio Group' (checked), and 'Radio Group_region 45' (unchecked). The 'OK' and 'Cancel' buttons are at the bottom right.

- **Message** – type in message text;
- Select send options: **send to radio group** or **send to subscribed radio**.
- In the «**Recipient**» field specify radio group or radios to send text message.

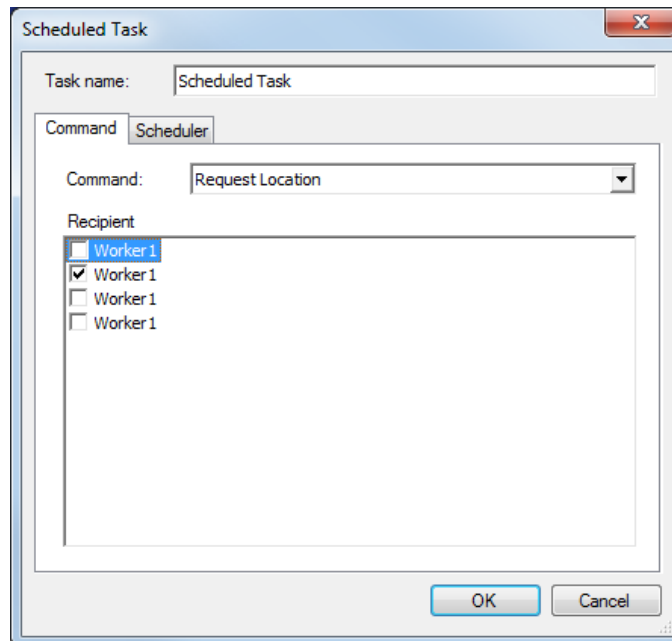
Send Telemetry – select to receive scheduled telemetry from selected subscribers:



The screenshot shows the 'Scheduled Task' dialog box with the 'Scheduler' tab selected. The 'Task name' field contains 'Scheduled Task'. The 'Command' dropdown is set to 'Send Telemetry'. The 'VIO' dropdown is set to 'VIO 2' and the 'Command' dropdown is set to 'Query state'. The 'Send to subscribed radio' radio button is selected. The 'Recipient' list shows four items: 'Worker1' (checked), 'Worker1' (unchecked), 'Worker1' (unchecked), and 'Worker1' (checked). The 'OK' and 'Cancel' buttons are at the bottom right.

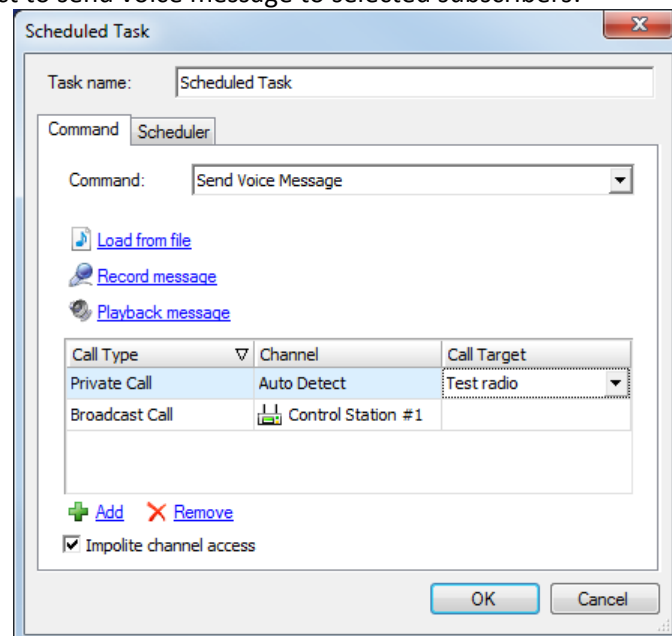
- Specify **VIO** and **Command** to receive telemetry from selected subscribers.
- Select send options: **send to radio group** or **send to subscribed radio**.
- In the «**Recipient**» field specify radio group or radios to receive telemetry data.

Request location – select to receive selected radios location data:




- In the «**Recipient**» field specify radio group or radios to receive radio's location data.

Send voice message – select to send voice message to selected subscribers:



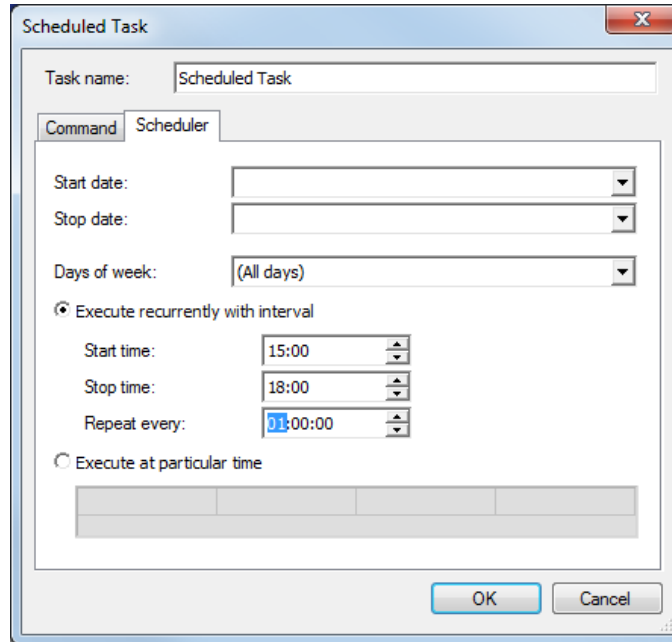
- **Load from file** - choose to load an existing file from your PC;
- **Record Message** - choose to record new message;
- **Playback message** - choose to playback an existing message.

Specify **call type**, **channel** and **call target** for voice message:

Note: to send a Voice Message to a subscriber from a phone book click  button in the Call Target column and select the contact in the phone book.

- **Impolite channel access** - the radio will always transmit when the Push-to-Talk (PTT) button is pressed (not available in a Capacity Plus Personality channel).

Scheduler – set scheduler parameters:



- **Start date** – select a date to start the task;
- **Stop date** – select a date to stop the task;
- **Days of week** – select days of week to export the data;
- **Execute recurrently with interval** – select to set frequency of data export:
- **Start time** – specify time to start data export;
- **Stop time** - specify time to stop data export;
- **Repeat every** – specify time period to export data;
- **Execute at particular time** – select export time in columns of table below.

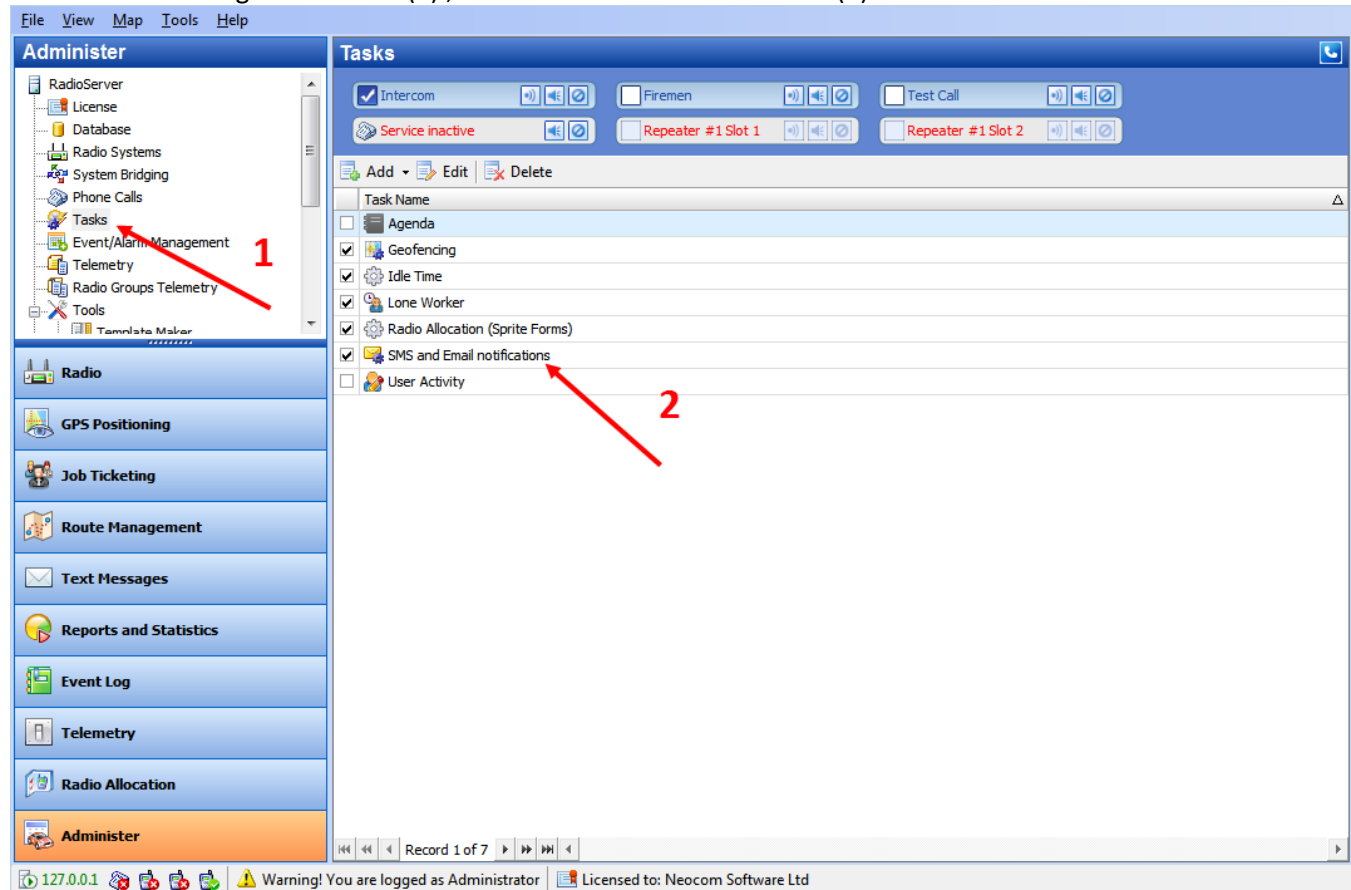
SMS and Email Notifications

TRBOnet Dispatch Software allows manage text messages:

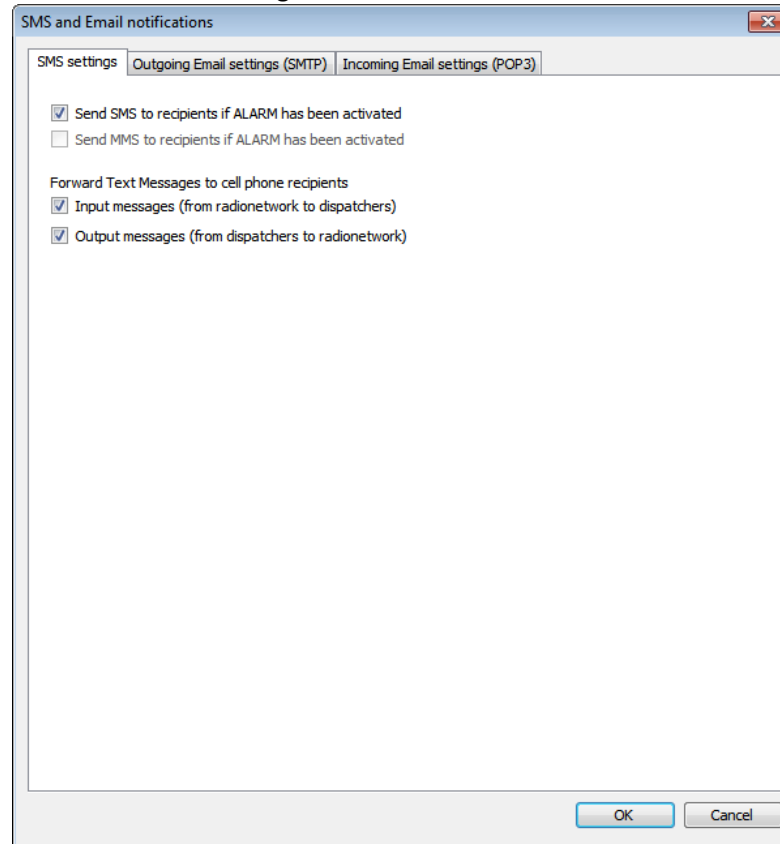
1. Send Text Messages from LAN to a particular radio or talk group (POP3 Server);
2. Forward all Text Messages from radios to base radio to particular email address (SMTP Server).

Note: Microsoft Exchange Server can be used as SMTP and POP3 servers. For more details on SMTP or POP3 servers ask your System Administrator.

To enable the task go to «**Tasks**» (1) , «**SMS and Email notifications**» (2):



SMS settings - set parameters for SMS sending:



- **Send SMS to recipients if ALARM has been activated** – select to send SMS in case of Alarm on the radio;
- **Send MMS to recipients if ALARM has been activated** – select to send MMS in case of Alarm on the radio;

Forward Text Messages to cell phone recipients

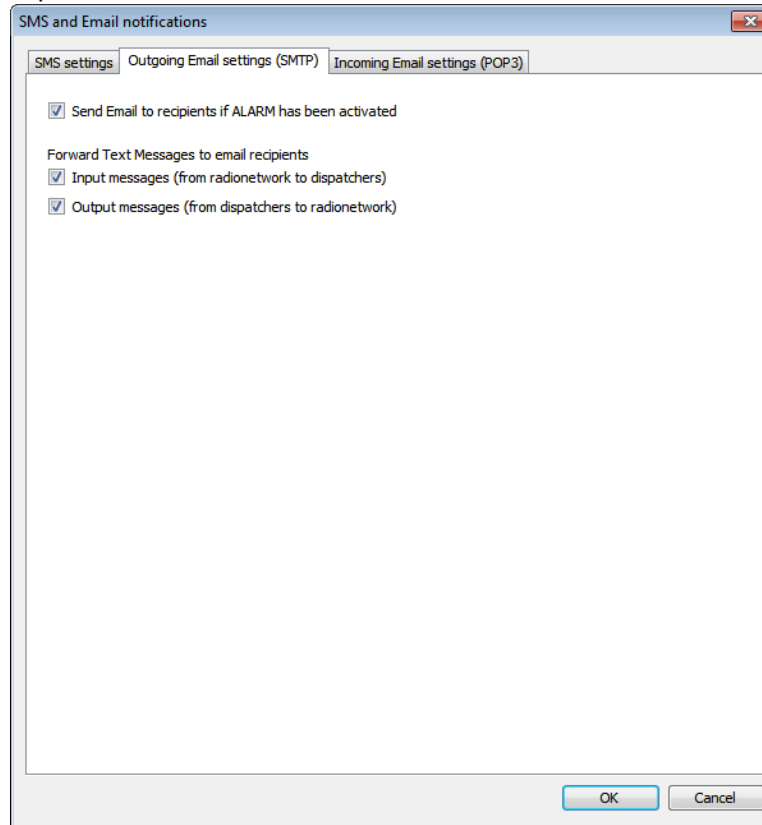
- **Input messages (from radio network to Dispatchers)** – select to forward incoming text messages to cell phone;
- **Output messages (from Dispatchers to radio network)** – select to forward outgoing text messages to cell phone;

For more details on sms settings go to

Outgoing email settings (SMTP)

A radio sends text messages to base station. TRBOnet RadioServer forwards all text messages to a particular email address (e.g. admin@yourcompany.com). Administrator receives text messages from radios as regular emails.

Configure outgoing email parameters:



- **Send Email to recipients if ALARM has been activated** – select to send Email in case of Alarm;

Forward Text Messages to email recipients

- **Input messages (from radio network to Dispatchers)** – select to forward incoming text messages to Email address(es);
- **Output messages (from Dispatchers to radio network)** – select to forward outgoing text messages to Email address(es);

Incoming email settings (POP3)

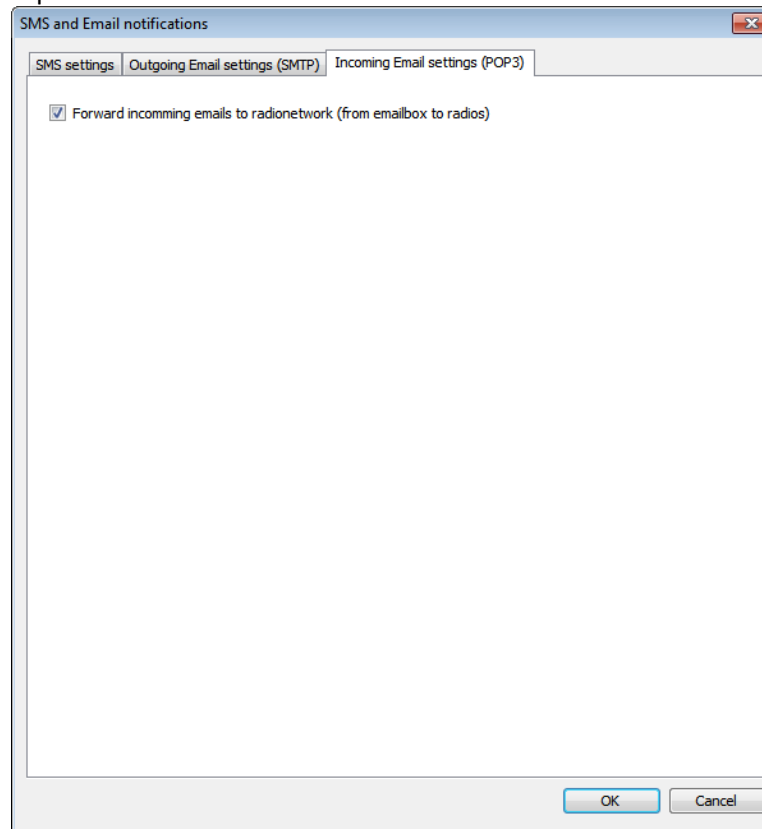
Sending emails to a dedicated email address (e.g. radioserver@yourcompany.com).

TRBOnet RadioServer connects to POP3 server, reads emails and sends text messages to radios or talk groups.

1. Create an email account on your email server.
2. Send an email to radioserver@yourcompany.com. In the «Subject» field type in **Radio ID: XXX** to send an email to selected radio or **Group ID: XXX** to send an email to selected radio group.

Note: If you did not specify the «Subject» of email properly or specify not existing **Radioid**, you will see an appropriate notification in the Event Log of Dispatcher Console.

Configure incoming email parameters:



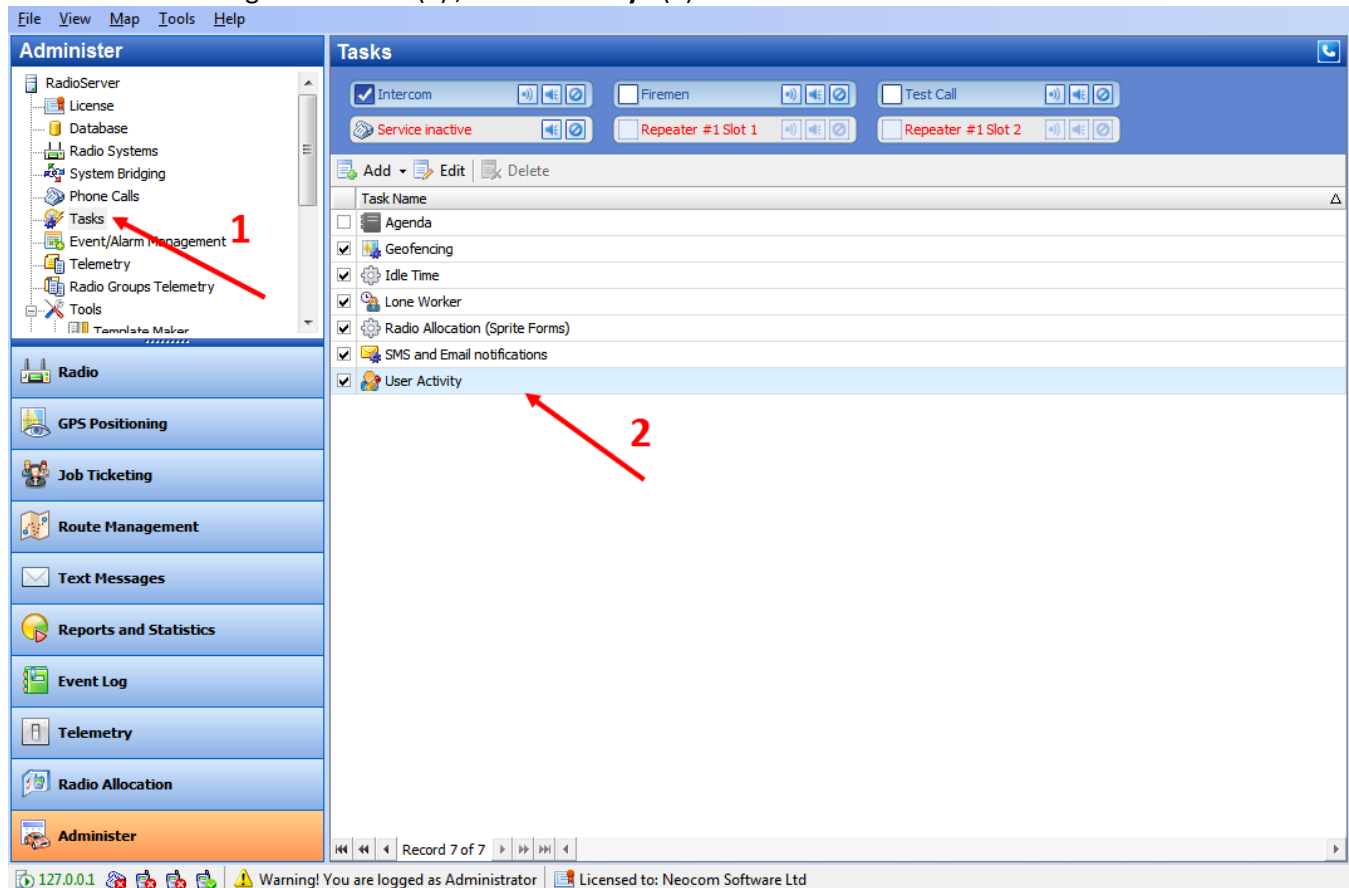
- **Forward incoming emails to radio network (from email box to radios)** – select to forward incoming emails to radio network;

User Activity

The **User Activity** function allows the Dispatcher make lists of subscribers can be assigned to due to their activity.

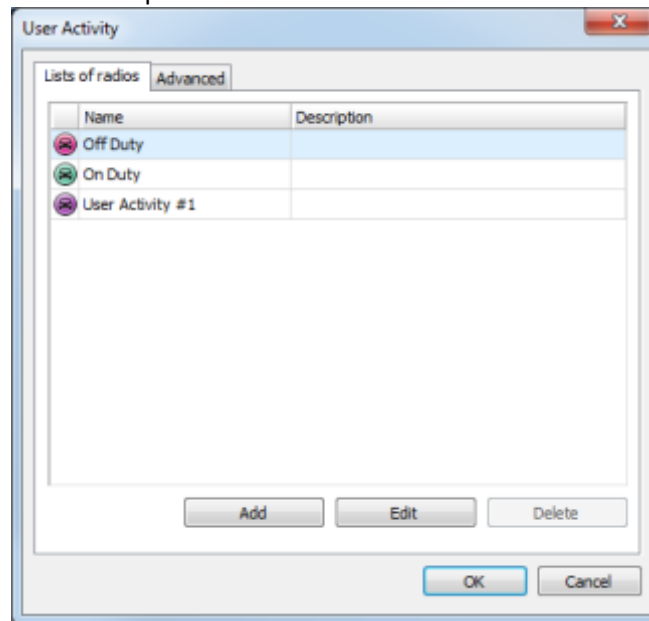
For example, if a subscriber sends a message “**On duty**” or presses an exact preset telemetry button, this subscriber gets assigned to the “**On duty**” list in the Remote Dispatcher Console. The Dispatcher can also assign subscribers to lists manually.

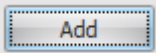
To enable the tasks go to «**Tasks**» (1) , «**User Activity**» (2):

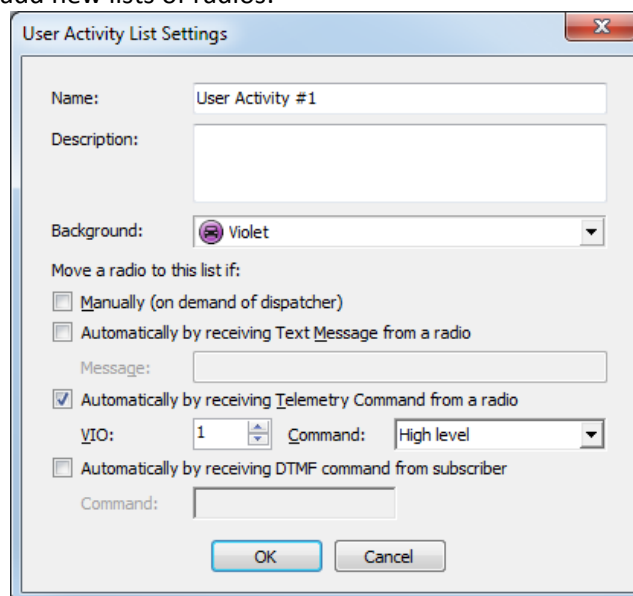


The screenshot shows the Remote Dispatcher Console interface. On the left, under the 'Administer' section, the 'Tasks' option is highlighted with a red arrow labeled '1'. On the right, in the 'Tasks' configuration window, the 'User Activity' checkbox is checked and highlighted with a red arrow labeled '2'. The interface also shows a list of tasks including Agenda, Geofencing, Idle Time, Lone Worker, Radio Allocation (Sprite Forms), SMS and Email notifications, and User Activity. The status bar at the bottom indicates 'Record 7 of 7' and 'Warning! You are logged as Administrator'.

Lists of radios – configure lists of radios parameters:



Click  button to add new lists of radios:

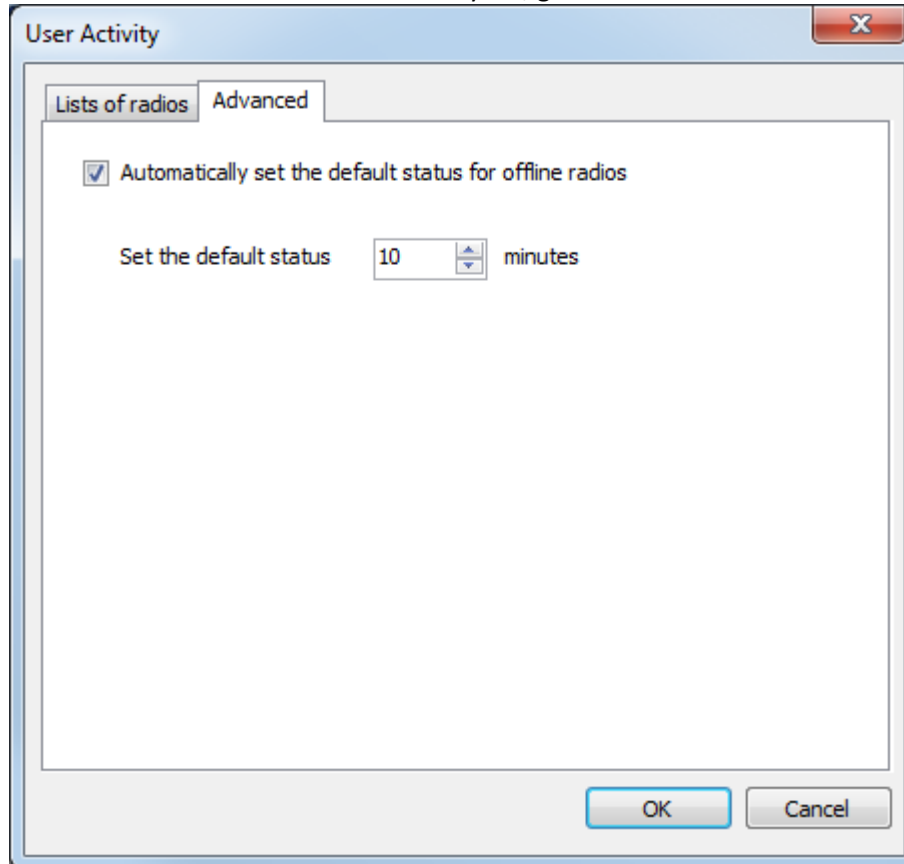


- **Name** – specify a name for new user activity list;
- **Description** – add a description for new user activity list;
- **Background** – select the background color to display the subscribers assigned to the list;

Move a radio to this list if:

- **Manually (on demand of Dispatcher)** – select to assign subscribers to the list manually;
- **Automatically by receiving Text Message from a radio** – select to assign a radio to the list after receiving a message (specify the message text in the **Message** field);
- **Automatically by receiving Telemetry Command from a radio** – select to assign a radio to the list after receiving telemetry. Specify **VIOs** (1 to 5) and the **Command**;
- **Automatically by receiving DTMF command from subscriber** – to assign a radio to the list after receiving a predefined DTMF command (specify the command in the **Command** field).

To assign an offline subscriber to the default User Activity list, go to the **Advanced** tab:

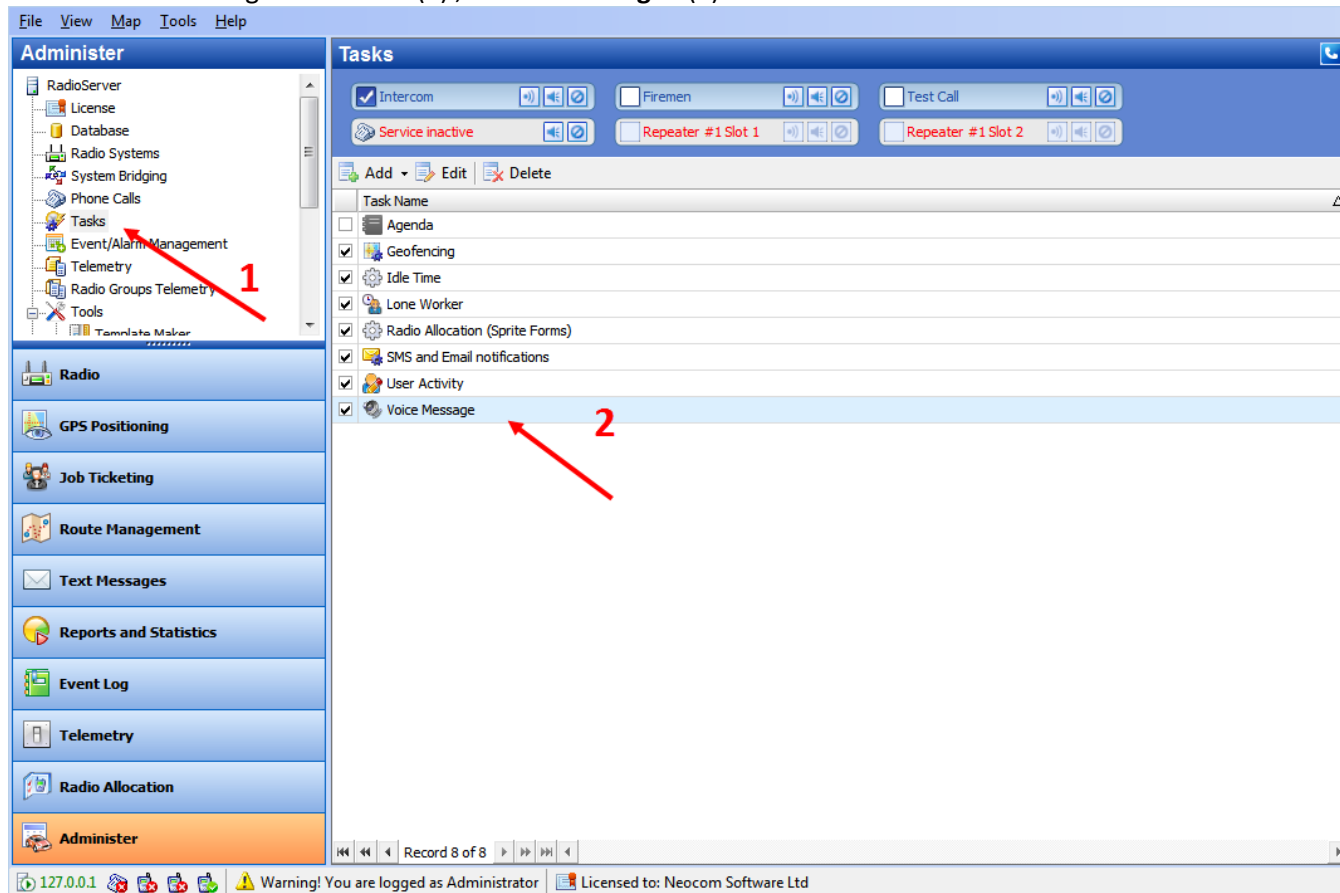


- **Automatically set the default status for offline radios** – select to allow assign the default status for offline radios;
- **Set the default status** – specify time period to set default status to a subscriber.

Voice Message

The Voice Message allows automatically broadcasting a predefined Voice Message after receiving telemetry, a text message or a DTMF command.

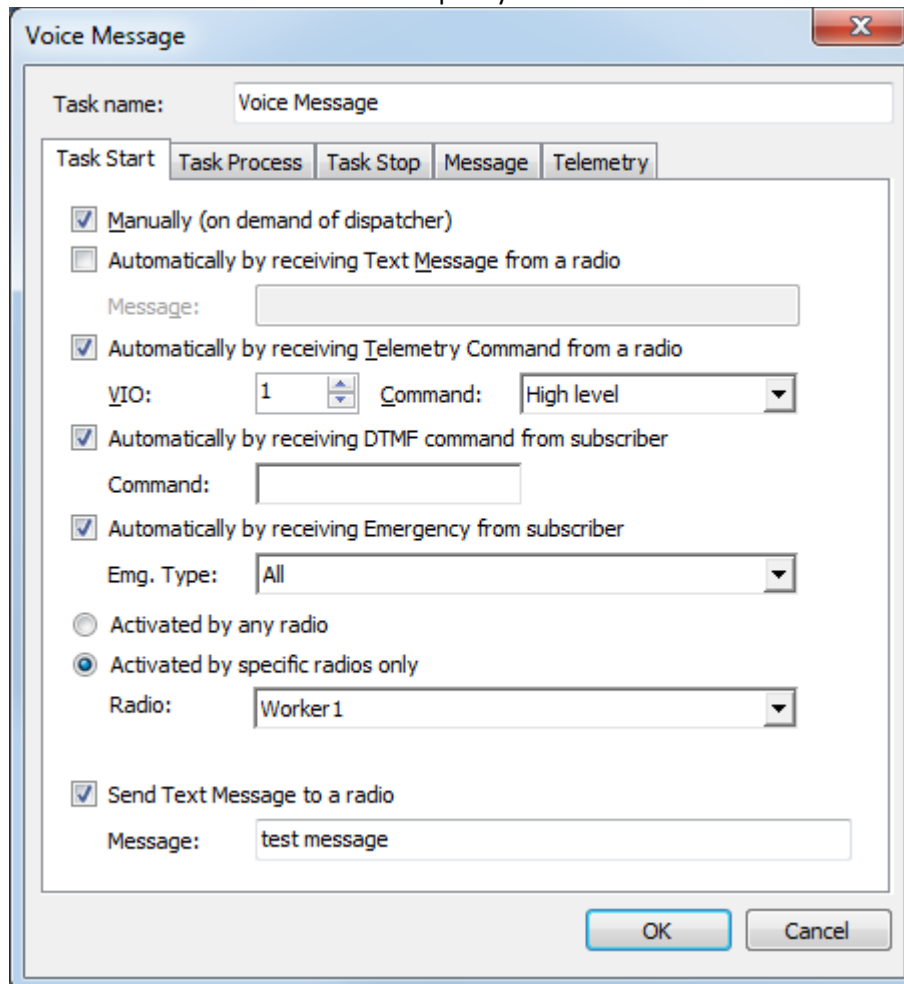
To enable the tasks go to «Tasks» (1) , «Voice Message» (2):



The screenshot shows the Neocom Software interface. On the left is a sidebar with a tree view under the 'Administer' tab. The 'Tasks' item is highlighted with a red arrow and the number '1'. Below the sidebar is a list of modules: Radio, GPS Positioning, Job Ticketing, Route Management, Text Messages, Reports and Statistics, Event Log, Telemetry, Radio Allocation, and Administer. The main window is titled 'Tasks' and contains a list of tasks with checkboxes. The 'Voice Message' task is checked and highlighted with a red arrow and the number '2'. At the top of the 'Tasks' window, there are buttons for 'Intercom', 'Firemen', 'Test Call', 'Service inactive', 'Repeater #1 Slot 1', and 'Repeater #1 Slot 2'. Below the task list are 'Add', 'Edit', and 'Delete' buttons. The bottom status bar shows 'Record 8 of 8', a warning 'Warning! You are logged as Administrator', and 'Licensed to: Neocom Software Ltd'.

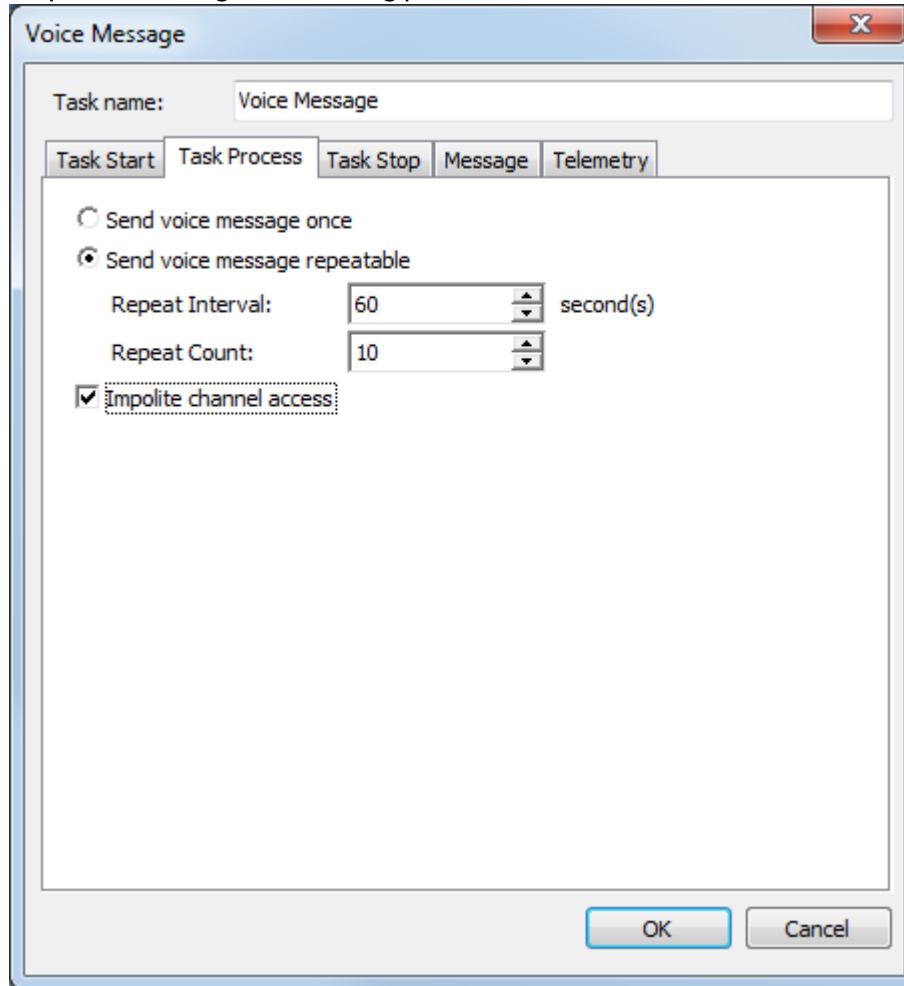
Click «**Add**» button to add a voice message task. The user can have several Voice Message policies for different purposes. Specify the name of the policy in the **Task name** field and set the policy's parameters.

Task start – set parameters to control the start of the policy:



- **Manually (on demand of the Dispatcher)** - select to allow the Dispatcher start Voice Message manually;
- **Automatically by receiving Text Message from a radio** – select to start Voice Message after receiving a message from a subscriber (specify the message text in the Message field);
- **Automatically by receiving Telemetry Command from a radio** – select to start Voice Message after receiving telemetry: set the telemetry **VIO** (1 to 5) and the **Command** (**High**, **Low** or **Pulse**);
- **Automatically by receiving DTMF command from subscriber** – select to start Voice Message after receiving a DTMF command from radio subscriber (specify the command in the Command field, e.g. 1221);
- **Activated by any radio** – filter to receive data for enabling task. Select to receive data from any radio in the system;
- **Activate by specific radios only** - filter to receive data for enabling task. Select to receive data from selected radios in the system;
- **Send Text Message to a radio** – select to notify with a text message when Voice Message starts (specify the message text in the Message field);

Task Process – specify Voice Message transmitting parameters:



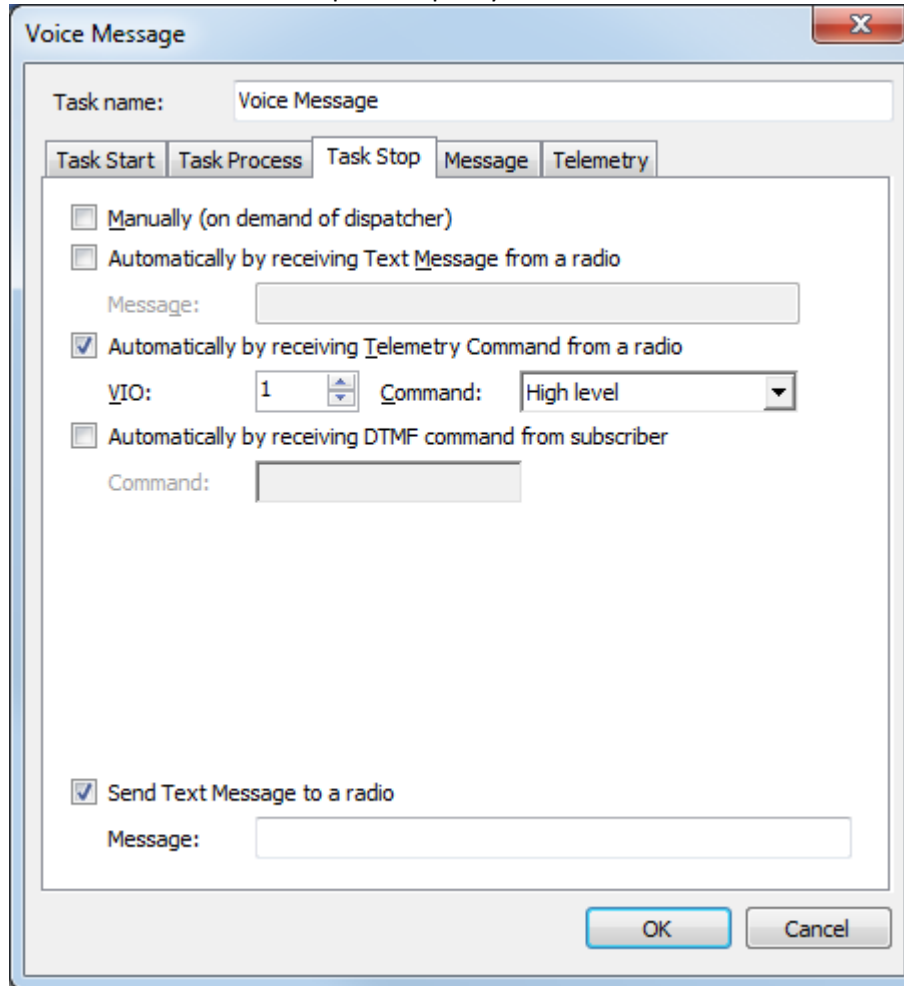
The dialog box is titled "Voice Message" and has a close button (X) in the top right corner. It contains a "Task name:" field with the value "Voice Message". Below this are five tabs: "Task Start", "Task Process" (which is selected), "Task Stop", "Message", and "Telemetry". The "Task Process" tab contains the following options:

- ☐ Send voice message once
- ☒ Send voice message repeatable
 - Repeat Interval: 60 second(s)
 - Repeat Count: 10
- ☒ Impolite channel access

At the bottom right of the dialog box are "OK" and "Cancel" buttons.

- **Send Voice Message once** – select to send voice message to a selected radio (s) once;
- **Send Voice Message repeatable** - specify **Repeat Interval** and **Repeat Count** if you need to send Voice Message more than once;
- **Impolite channel access** - the radio will always transmit when the Push-to-Talk (PTT) button is pressed (not available in a Capacity Plus Personality channel).

Task stop – set parameters to control the stop of the policy:



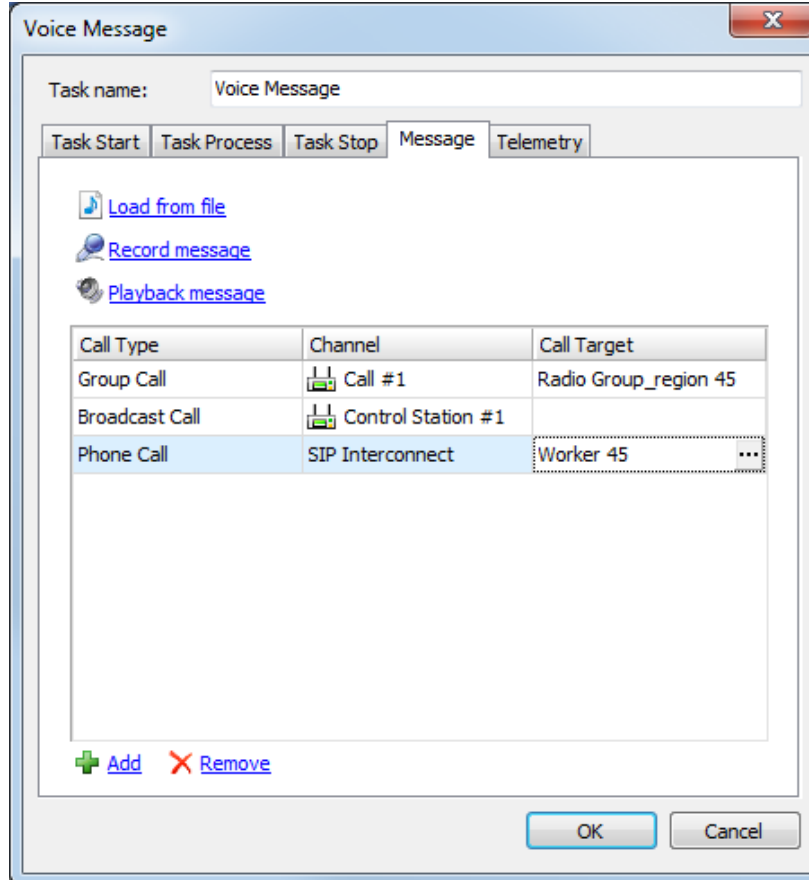
The dialog box is titled "Voice Message" and has a close button (X) in the top right corner. It contains a "Task name:" field with the value "Voice Message". Below this are five tabs: "Task Start", "Task Process", "Task Stop", "Message", and "Telemetry". The "Task Stop" tab is currently selected. Inside this tab, there are four checkboxes with corresponding fields:

- ☐ **Manually (on demand of dispatcher)**
- ☐ **Automatically by receiving Text Message from a radio**
 Message:
- ☒ **Automatically by receiving Telemetry Command from a radio**
 VIO: Command:
- ☐ **Automatically by receiving DTMF command from subscriber**
 Command:

At the bottom of the dialog, there is a checkbox ☒ **Send Text Message to a radio** with a corresponding "Message:" field . At the bottom right are "OK" and "Cancel" buttons.

- **Manually (on demand of the Dispatcher)** - select to allow the Dispatcher stop Voice Message manually;
- **Automatically by receiving Text Message from a radio** – select to stop Voice Message after receiving a message from a subscriber (specify the message text in the Message field);
- **Automatically by receiving Telemetry Command from a radio** – select to stop Voice Message after receiving telemetry: set the telemetry **VIO** (1 to 5) and the **Command** (**High**, **Low** or **Pulse**);
- **Automatically by receiving DTMF command from subscriber** – select to stop Voice Message after receiving a DTMF command from radio subscriber (specify the command in the Command field e.g. 2112);
- **Send Text Message to a radio** – select to notify with a message when Voice Message starts (specify the message text in the Message field).

Message – specify Voice Message file parameters:




The dialog box titled "Voice Message" has a "Task name:" field set to "Voice Message". Below it are tabs for "Task Start", "Task Process", "Task Stop", "Message" (selected), and "Telemetry". Under the "Message" tab, there are three options: "Load from file" (with a document icon), "Record message" (with a microphone icon), and "Playback message" (with a speaker icon). Below these is a table with three columns: "Call Type", "Channel", and "Call Target".

Call Type	Channel	Call Target
Group Call	Call #1	Radio Group_region 45
Broadcast Call	Control Station #1	
Phone Call	SIP Interconnect	Worker 45 ...

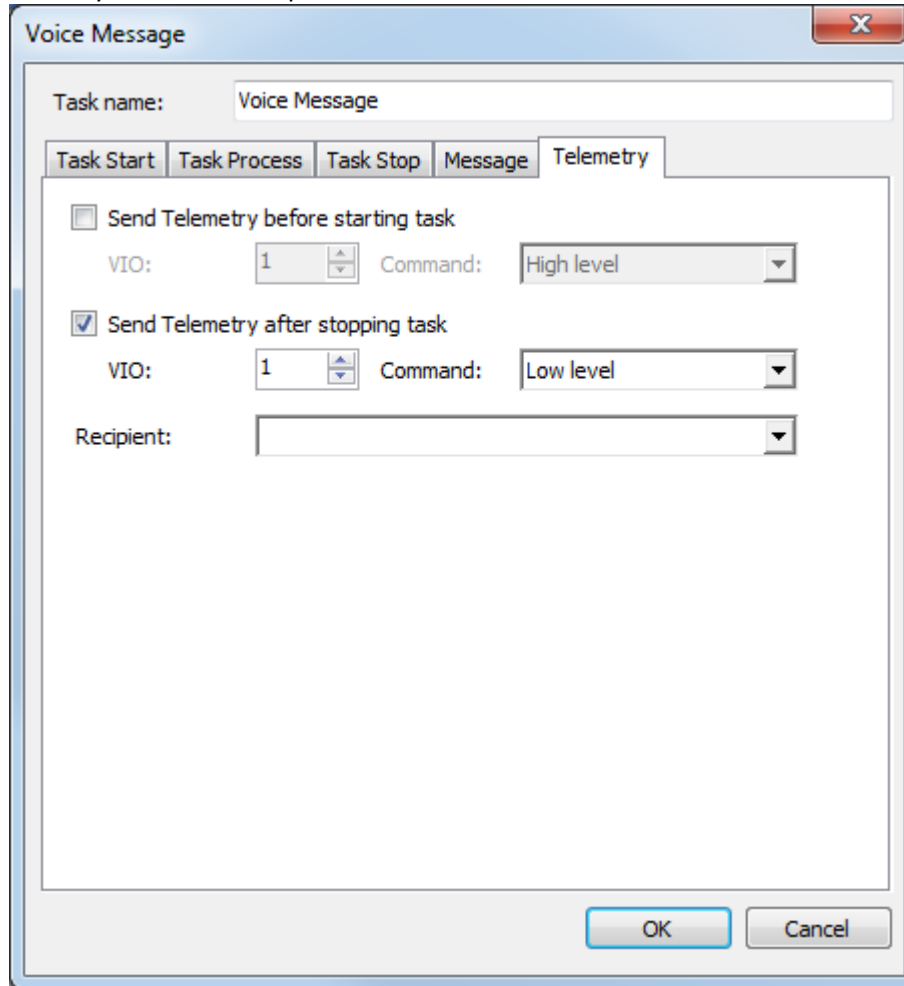
At the bottom of the table area are "+ Add" and "- Remove" buttons. At the bottom of the dialog are "OK" and "Cancel" buttons.

- **Load from file** - choose to load an existing file from your PC;
- **Record Message** - choose to record new message;
- **Playback message** - choose to playback an existing message.

Specify **call type**, **channel** and **call target** for voice message:

Note: to send a Voice Message to a subscriber from a phone book click  button in the Call Target column and select the contact in the phone book.

Telemetry – set telemetry transmission options:



The dialog box is titled "Voice Message" and has a close button (X) in the top right corner. It contains a "Task name:" field with the value "Voice Message". Below this are five tabs: "Task Start", "Task Process", "Task Stop", "Message", and "Telemetry". The "Telemetry" tab is selected. Inside the "Telemetry" tab, there are two checkboxes: "Send Telemetry before starting task" (unchecked) and "Send Telemetry after stopping task" (checked). Below the first checkbox, there is a "VIO:" field with a spinner set to "1" and a "Command:" dropdown menu set to "High level". Below the second checkbox, there is a "VIO:" field with a spinner set to "1" and a "Command:" dropdown menu set to "Low level". At the bottom of the tab, there is a "Recipient:" dropdown menu. At the bottom of the dialog box are "OK" and "Cancel" buttons.

- **Send telemetry before start task** – select to send telemetry before voice message will be transmitted.
- Specify **VIO** and **Command** to send the telemetry.
- **Send telemetry after stop task** – select to send telemetry after voice message will be transmitted.
- Specify **VIO** and **Command** to send the telemetry.
- **Recipient** – select the radio to send the telemetry.

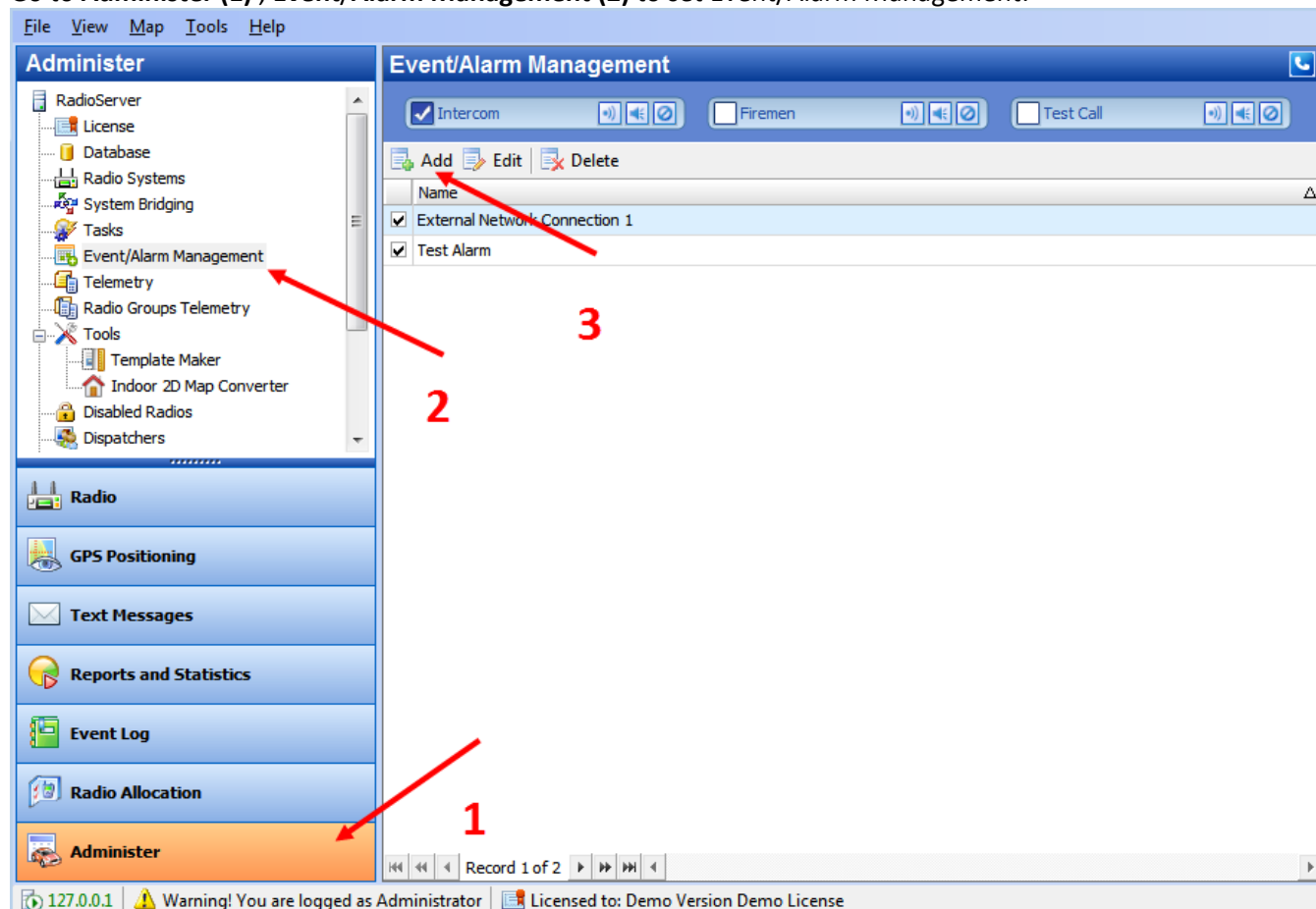
Click «**OK**» to save voice message policy settings.

Event/Alarm Management

Event/Alarm Management feature allows to create action rules for Alarms, Emails, Notifications, Text Messages to radios etc. When configured rule is accomplished, configured action starts.

For example, an external application sends text data which contains «alarm» text to TRBOnet software. «Alarm» text is configured as a rule to start voice messaging to selected recipients radios (e.g. firemen group) with predefined voice message (e.g. «Alarm in Sector N»). Finally, firemen group is notified about emergency condition.

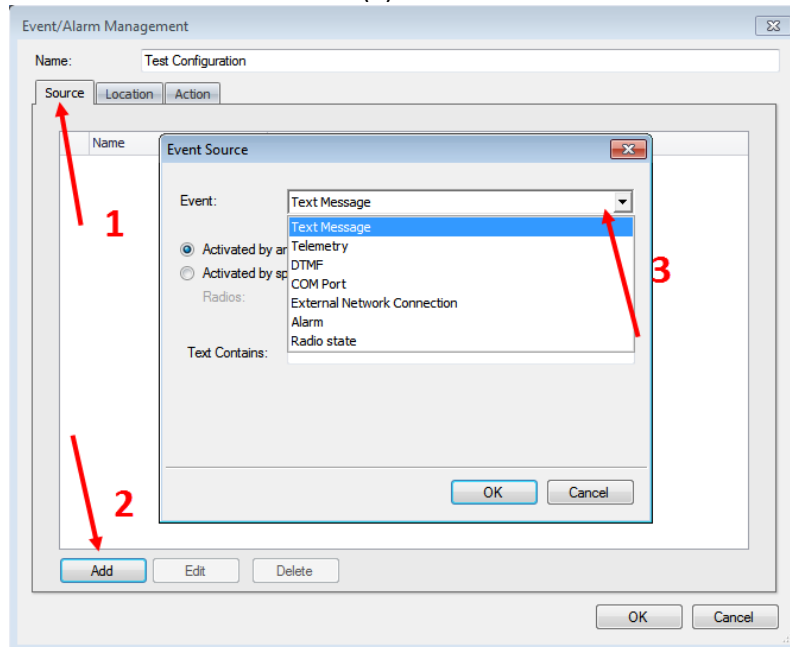
Go to **Administer (1)**, **Event/Alarm Management (2)** to set Event/Alarm Management:



The screenshot shows the TRBOnet software interface. On the left, there is a sidebar with a tree view of the application's structure. The 'Administer' button is highlighted at the bottom of this sidebar, indicated by a red arrow and the number 1. The 'Event/Alarm Management' option is also highlighted in the tree view, indicated by a red arrow and the number 2. The main window displays the 'Event/Alarm Management' configuration screen. At the top of this screen, there are checkboxes for 'Intercom', 'Firemen', and 'Test Call'. Below these, there are buttons for 'Add', 'Edit', and 'Delete'. The 'Add' button is highlighted with a red arrow and the number 3. The main area of the screen shows a list of configurations, including 'External Network Connection 1' and 'Test Alarm'. At the bottom of the screen, there is a status bar showing the version '127.0.0.1', a warning message 'Warning! You are logged as Administrator', and the license information 'Licensed to: Demo Version Demo License'.

Click «Add» button (3) to add new Event/Alarm Management configuration.

Go to **Source** page (1) and click  button (2) to add new data source for the action:

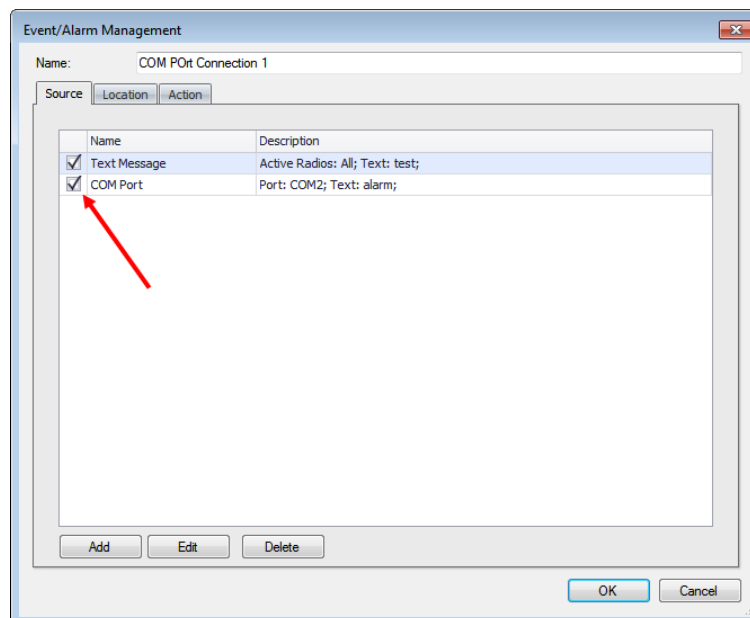


Event – select event in the dropdown list to set it as a rule for an action (3).

Variable settings for event source see in the table below:

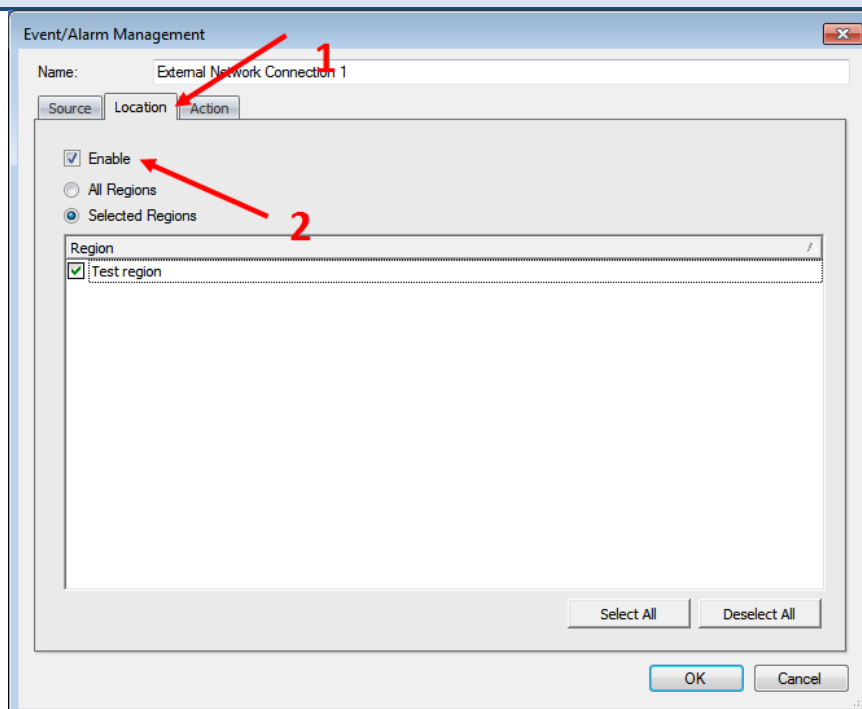
Event Type	Parameters Description
Text Message	<ul style="list-style-type: none"> • Activated by any radio – filter to receive text messages with predefined text from any radio in the system to enable the action; • Activate by specific radios only - filter to receive text messages with predefined text from selected radios in the system to enable the action; • Text Contains – specify the text or digits text messages from radios should contain to start an action, selected on Action page.
Telemetry	<ul style="list-style-type: none"> • Activated by any radio – filter to receive telemetry data from any radio in the system to enable the action; • Activate by specific radios only - filter to receive telemetry data from selected radios in the system to enable the action; • VIO – select VIO to send telemetry; • Command – specify a command for selected VIO.
DTMF	<ul style="list-style-type: none"> • Activated by any radio – filter to receive DTMF command from any radio in the system to enable the action; • Activate by specific radios only - filter to receive DTMF command from selected radios in the system to enable the action; • Command – specify DTMF command to start an action.
COM Port	<ul style="list-style-type: none"> • COM Port – select COM Port connection configured in Server Configurator; • Regular Expression – specify the text or digits the data from external application should contain to start an action, selected on Action page. For more details on regular expressions see wiki article.
External Network Connection	<ul style="list-style-type: none"> • Connection – select connection configured in Server Configurator on TCP/IP page; • Regular Expression – specify the text or digits the data from external application should contain to start an action, selected on Action page. For more details on regular expressions see wiki article.
Alarm	<ul style="list-style-type: none"> • Activated by any radio – filter to receive an alarm from any radio in the system to enable the action; • Activate by specific radios only - filter to receive an alarm from selected radios in the system to enable the action; • Alarm – select alarm type in the dropdown list. <ul style="list-style-type: none"> • Emergency Alarm – alarm configured in radio Code Plug; • Man Down – subscriber positioning monitoring; • No Movement – subscriber movement monitoring; • Crash Detect – subscriber speed and sudden stop monitoring; • Geofencing - control location and speed of radios respectively to manually specified regions on a map.
Radio State	<ul style="list-style-type: none"> • Activated by any radio – filter to receive radio state data from any radio in the system to enable the action; • Activate by specific radios only - filter to receive radio state data from selected radios in the system to enable the action; • Radio is detected as online – when radio state «Online» comes, the action starts; • Radio is detected as offline - when radio state «Offline» comes, the action starts.

Note: check the event you want to enable. In case no one event selected all configured events are disabled by default:



Go to **Location** page (1) to set regions for the action. When Location rule enabled and a region is selected events, mentioned on **Source** page should take place in the selected region to start the action.

Note: when source event **COM Port** and/or **External Network Connection** selected, **Location** rule should not be used.

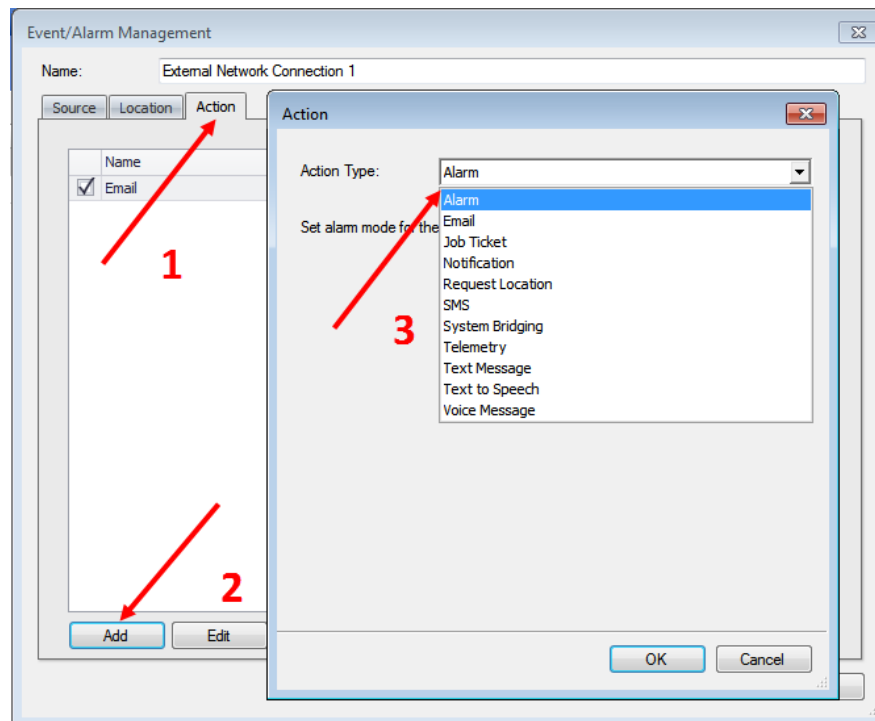


Check «Enable» (2) to apply **Location** rule to the action.

- **All Regions** – select to use Source Event rule in all map regions to start the action;
- **Selected Regions** – select to use Source Event rule to start the action only in selected regions.

Go to **Action** page (1) to set actions for **Source Event** and **Location** rules. In the Actions list Administrator can add and configure action types to be started when rules, configured on Source and/or Location pages, will be accomplished.

Click  button (2) to add an action:



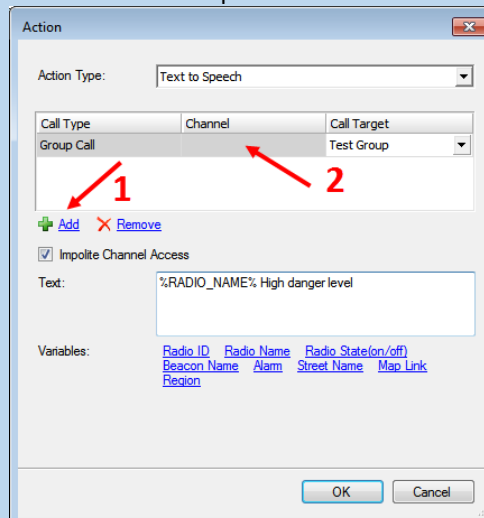
Action – select action type in the dropdown list (3).

Variable settings for the Actions see in the table below:

Action Type	Parameters Description
Alarm	Not applicable.
Email	<ul style="list-style-type: none"> • Recipients – select email recipients in the dropdown list; • Text – type in email text to send to recipients; • Variables – Administrator can add Variables to include in the email text: <ul style="list-style-type: none"> ✓ Radio ID – Radio ID data will be included in the email text ✓ Radio Name – Radio Name will be included in the email text ✓ Radio State on/off – Radio State data will be included in the email text ✓ Beacon Name – Beacon Name will be included in the email text (if beacons are used in the system) ✓ Alarm – Alarm Type will be included in the email text ✓ Street Name – Street Name will be included in the email text (available when Use MapPoint location resolving option selected for Enhanced GPS) ✓ Map Link – Link to radio current location on Google Maps will be included in the email text ✓ Region – region name will be included in the email text. ✓ Incoming Text Data – all incoming text data (e.g. COM port devices and External Network Connection data, text messages) will be included in the email text.
Job Ticket	<ul style="list-style-type: none"> • Deadline – select task end time; • Recipients – Administrator can select radios or radio groups registered in the system; • Description – add Job Ticket description; • Variables – add variables to include in Job Ticket description.
Notification	<ul style="list-style-type: none"> • Severity – select severity level in the dropdown list: <ul style="list-style-type: none"> ✓ Information – select to set low severity level ✓ Warning – select to set middle severity level ✓ Alarm – select to set high severity level. • Text – add text in the notification to display in the Dispatch Console; • Variables – add variables to include in Notification.
Request Location	Not applicable.
SMS	<ul style="list-style-type: none"> • Recipients – select sms recipients in the dropdown list; • Text – type in sms text to send to recipients; • Variables – Administrator can add Variables to include in the sms text.
System Bridging	<ul style="list-style-type: none"> • Profiles – select System Bridging profile to activate/deactivate; • Activate/deactivate – select action type for System Bridging pro file.
Telemetry	<ul style="list-style-type: none"> • VIO – select VIO to send telemetry; • Command – specify a command for selected VIO; • Recipients – select Radios or Radio Groups to send telemetry.
Text Message	<ul style="list-style-type: none"> • Recipients – select text message recipients in the dropdown list; • Text Message – type in message text to send to recipients; • Variables – Administrator can add Variables to include in the message text.

Text to Speech

Text to speech feature allows convert text to speech:



The 'Action' dialog box shows the following configuration:

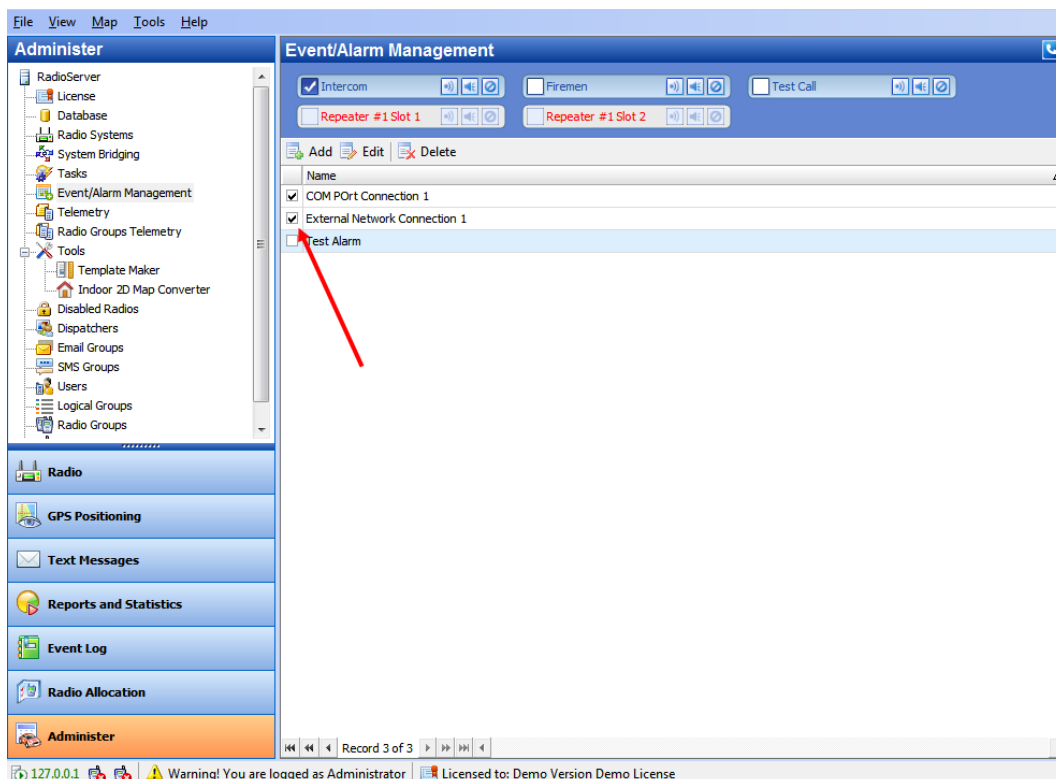
- Action Type: Text to Speech
- Call Type: Group Call
- Channel: (empty)
- Call Target: Test Group
- Buttons: Add, Remove
- Impolite Channel Access: ☒
- Text: %RADIO_NAME% High danger level
- Variables: Radio ID, Radio Name, Radio State(on/off), Beacon Name, Alarm, Street Name, Map Link, Region
- Buttons: OK, Cancel

- **1** – click «Add» button to add new text to convert to speech;
- **2** – Configure Call Type, Channel and Call Target to send text converted to speech.
- **Text** – type in text to convert to speech.
- **Variables** - Administrator can add Variables to include in the message converted to speech.

Voice Message

- **Voice Messages** – select recorded voice messages. For more details on Voice Messages see [Tasks](#), **Voice Message** section.

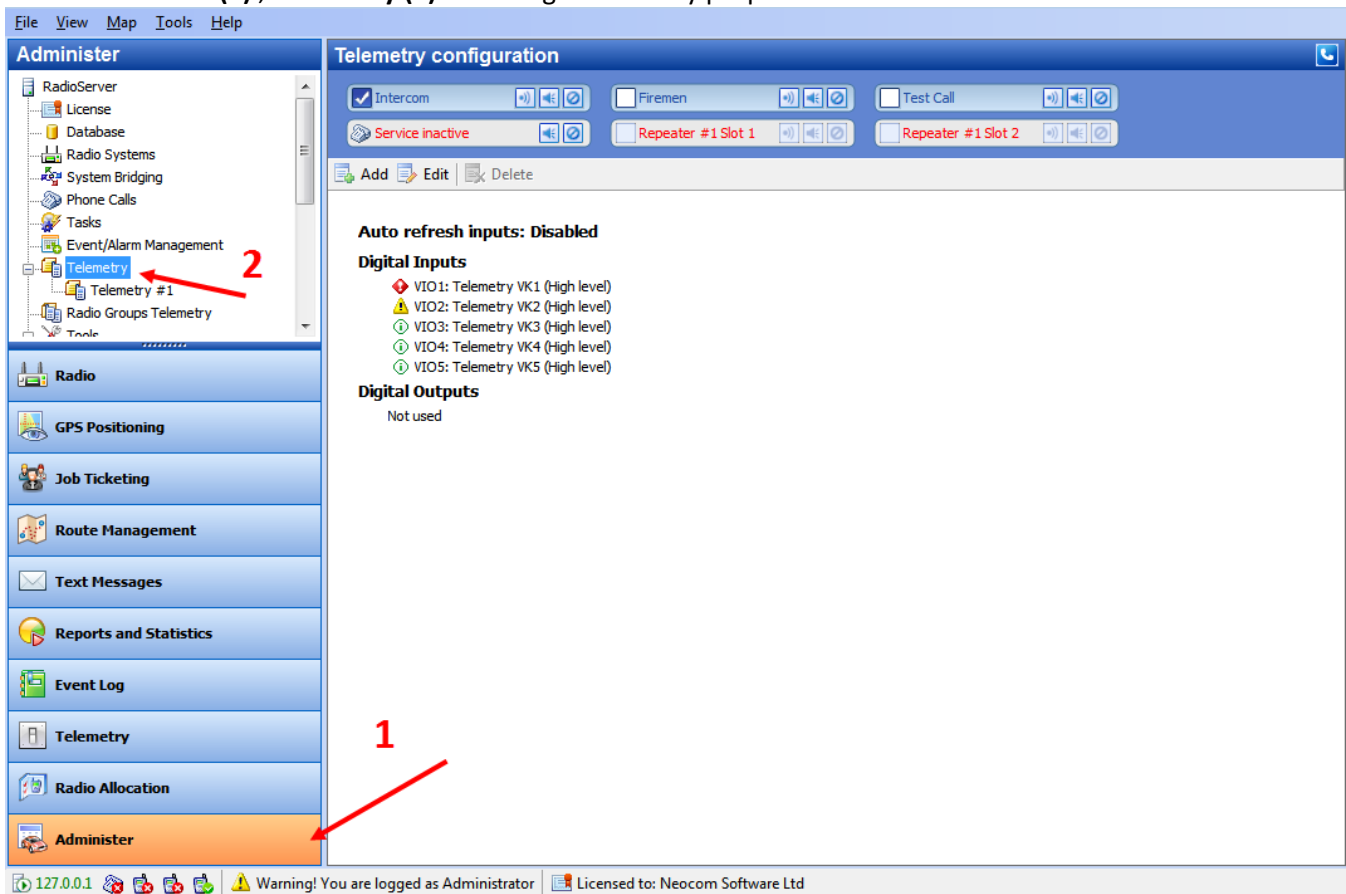
Note: After configuring check rules you want to enable in the list. In case when no one rule is selected, the action will not be started:



Telemetry

On the «Telemetry» page you can configure Telemetry.

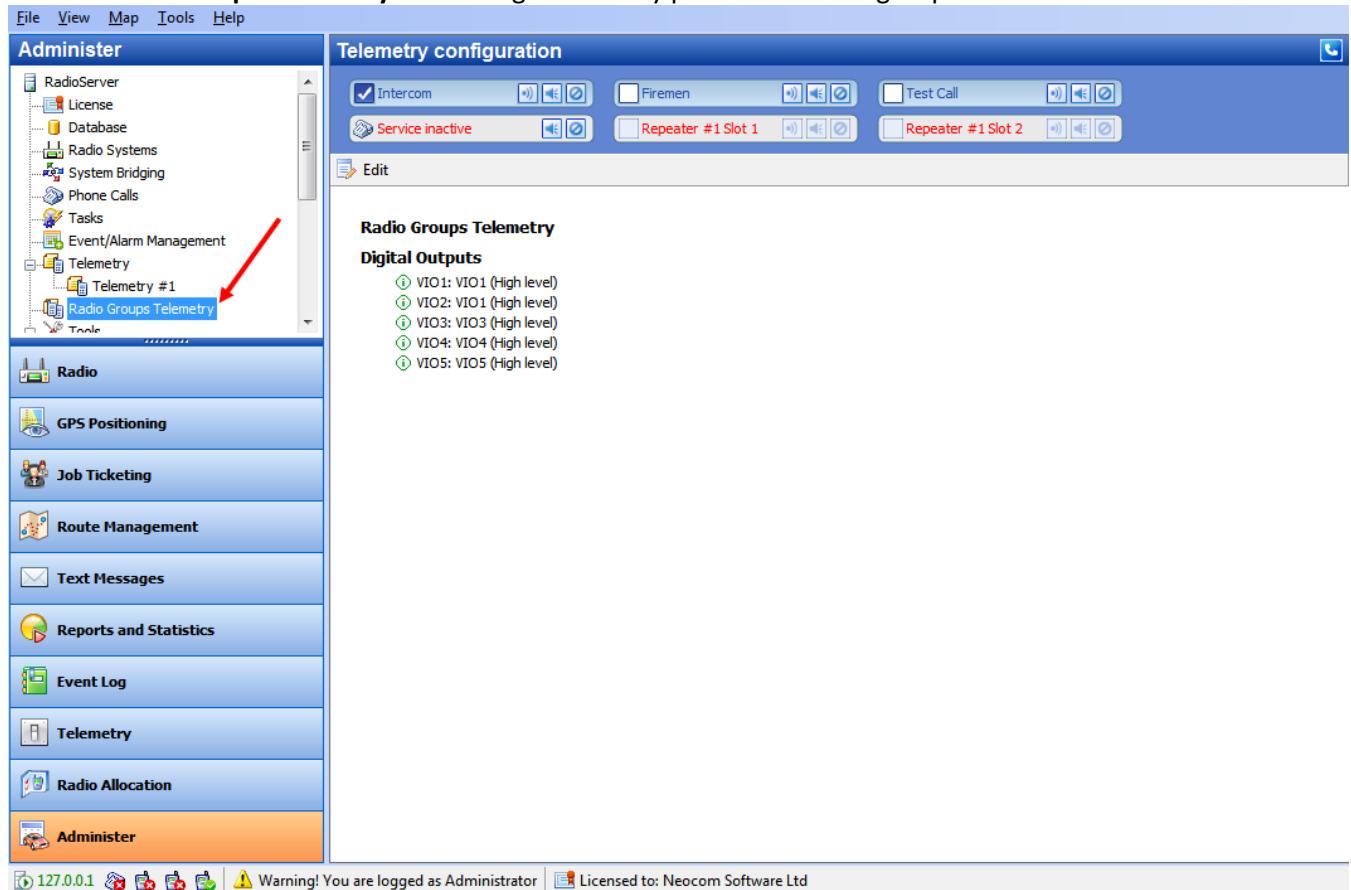
Go to **Administer (1)** , **Telemetry (2)** to manage Telemetry properties:



The screenshot shows the TRBOnet software interface. On the left, the 'Administer' menu is highlighted with a red arrow labeled '1'. In the 'Administer' sub-menu, 'Telemetry' is highlighted with a red arrow labeled '2'. The main window displays the 'Telemetry configuration' page. At the top, there are checkboxes for 'Intercom', 'Firemen', 'Test Call', 'Service inactive', 'Repeater #1 Slot 1', and 'Repeater #1 Slot 2'. Below these, there are sections for 'Auto refresh inputs: Disabled', 'Digital Inputs' (listing VIO1 through VIO5), and 'Digital Outputs' (labeled 'Not used'). The status bar at the bottom shows the version '127.0.0.1', a warning 'Warning! You are logged as Administrator', and the license 'Licensed to: Neocom Software Ltd'.

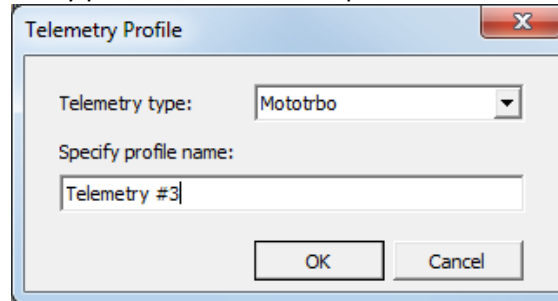
Radio Groups Telemetry

Go to «Radio Groups Telemetry» to manage telemetry profiles for radio groups:



The screenshot shows the Neocom Software interface. On the left is the 'Administer' sidebar with a tree view containing: RadioServer, License, Database, Radio Systems, System Bridging, Phone Calls, Tasks, Event/Alarm Management, Telemetry, Telemetry #1, **Radio Groups Telemetry** (highlighted with a red arrow), and Tools. Below the tree is a list of modules: Radio, GPS Positioning, Job Ticketing, Route Management, Text Messages, Reports and Statistics, Event Log, Telemetry, Radio Allocation, and Administer. The main area is titled 'Telemetry configuration' and contains a 'Telemetry configuration' section with checkboxes for Intercom (checked), Firemen, Test Call, Service inactive, Repeater #1 Slot 1, and Repeater #1 Slot 2. Below this is an 'Edit' button. The 'Radio Groups Telemetry' section is titled 'Digital Outputs' and lists five VIOs: VIO1: VIO1 (High level), VIO2: VIO1 (High level), VIO3: VIO3 (High level), VIO4: VIO4 (High level), and VIO5: VIO5 (High level). The status bar at the bottom shows the IP address 127.0.0.1, a warning 'Warning! You are logged as Administrator', and the license 'Licensed to: Neocom Software Ltd'.

Click «**Add**» button to add a telemetry profile for Radio Groups:



The dialog box titled "Telemetry Profile" has a close button (X) in the top right corner. It contains two fields: "Telemetry type:" with a dropdown menu showing "Mototrbo", and "Specify profile name:" with a text box containing "Telemetry #3". At the bottom are "OK" and "Cancel" buttons.

Specify Telemetry Type for Radio groups:

- **Mototrbo** – telemetry from Motorola devices.
- **Novox** – telemetry from Novox devices connected to radio via COM port.
- **Swift.Tracker** – telemetry from Swift.Tracker sensors. Swift.Tracker connects to radio over-the-air.
- **Sprite** – telemetry from Sprite devices.

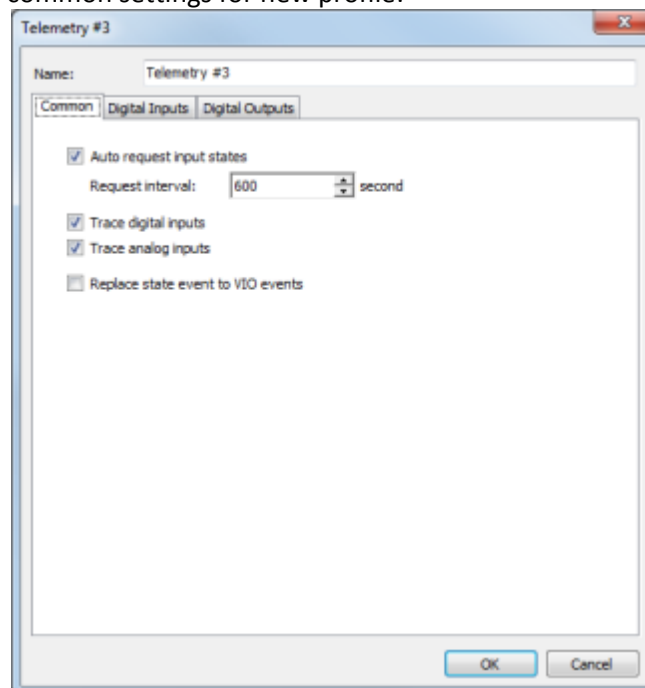
Note: Sprite telemetry profile can be read but not written.

Specify **profile name** to display in the Dispatch Console.

Click «**OK**» to add a telemetry profile.

Specify new telemetry profile settings.

On the **Common** tab specify common settings for new profile:



The dialog box titled "Telemetry #3" has a close button (X) in the top right corner. It has a "Name:" field with "Telemetry #3". Below are three tabs: "Common", "Digital Inputs", and "Digital Outputs". The "Common" tab is selected and shows the following settings:

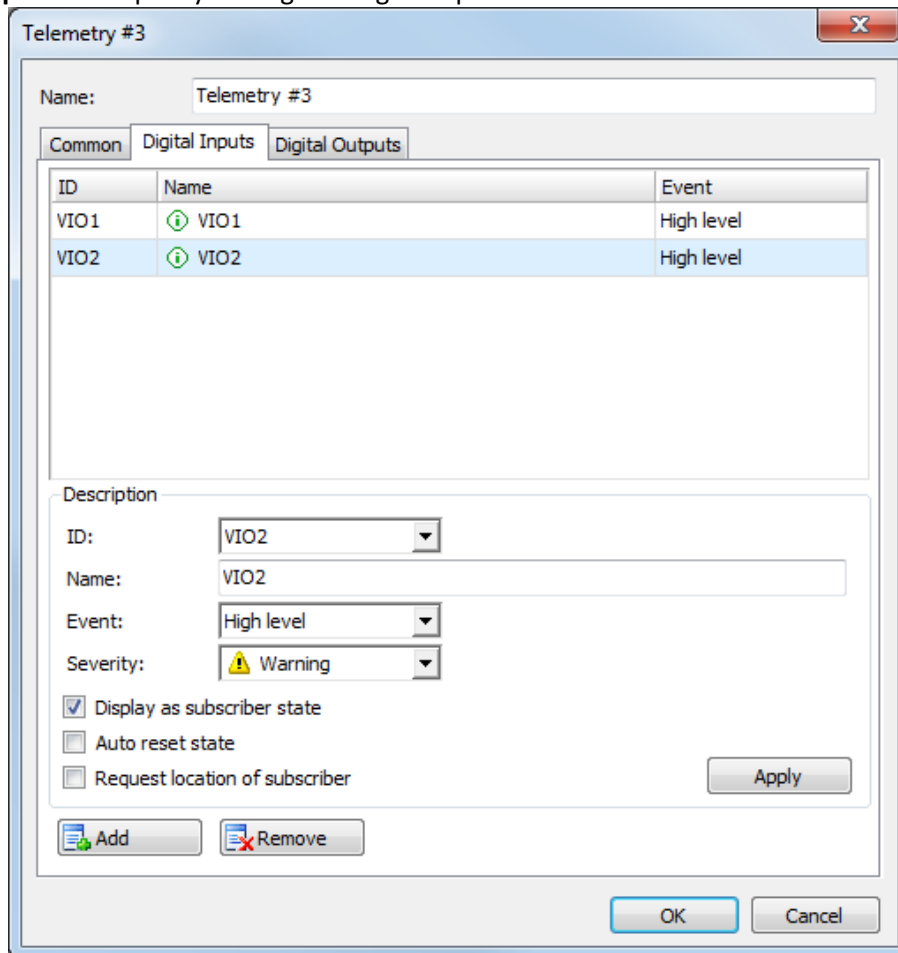
- ☒ Auto request input states
 - Request interval: 600 second
- ☒ Trace digital inputs
- ☒ Trace analog inputs
- ☐ Replace state event to VIO events

 At the bottom are "OK" and "Cancel" buttons.

- **Auto request input states** – select to set time interval to request input data. Specify time period in seconds (600 seconds set by default);
- **Trace digital inputs** – select to monitor digital inputs' damages;
- **Trace analog inputs** – select to monitor analog inputs' damages;
- **Replace state event to VIO events** – select to generate **VIO ON/OFF** event when the system compares the last and the current state of the VIO.

Note: Most of the policies are set to replace events, so it is recommended to enable this option.

On the «**Digital Inputs**» tab specify settings for digital inputs:



Telemetry #3

Name: Telemetry #3

Common Digital Inputs Digital Outputs

ID	Name	Event
VIO1	VIO1	High level
VIO2	VIO2	High level

Description

ID: VIO2

Name: VIO2

Event: High level

Severity: Warning

☒ Display as subscriber state
☐ Auto reset state
☐ Request location of subscriber

Apply

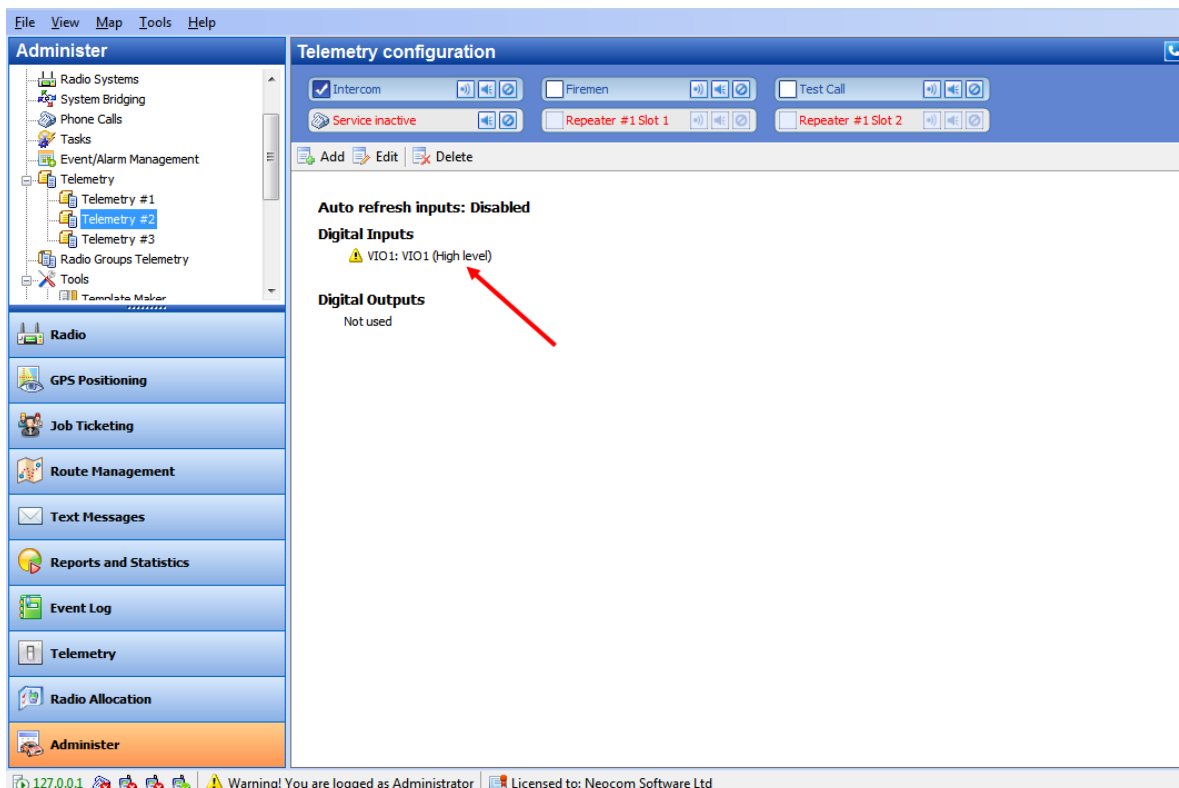
Add Remove

OK Cancel

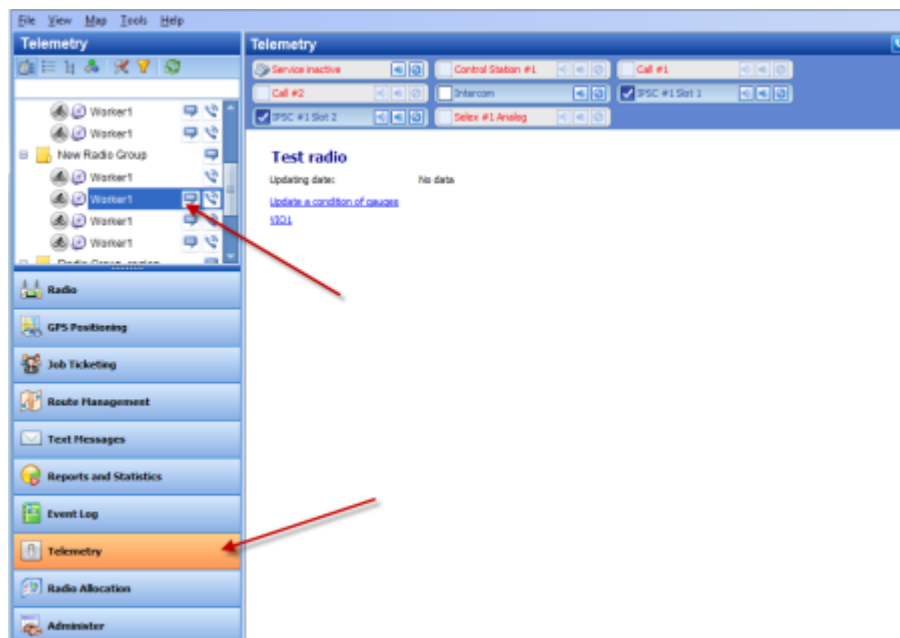
Click «**Add**» button to set VIO (Virtual Configured PIN):

- **ID** – select VIO in the dropdown list to set its parameters;
- **Name** – specify VIO name to display in the Dispatch Console;
- **Event** – a filter for telemetry events. Select the signal level of VIO events in the dropdown list. When any event with selected signal level takes place on the selected VIO, the telemetry activates. The signal level must be the same in radio's code plug and in Telemetry configuration in TRBOnet. It is a programmable option that sets the pin's voltage level to **High** or **Low** in order to trigger a selected functionality;

- **Severity** – specify severity level for VIO event in the dropdown list. Selected icon will be displayed as VIO icon in the Dispatch Console:



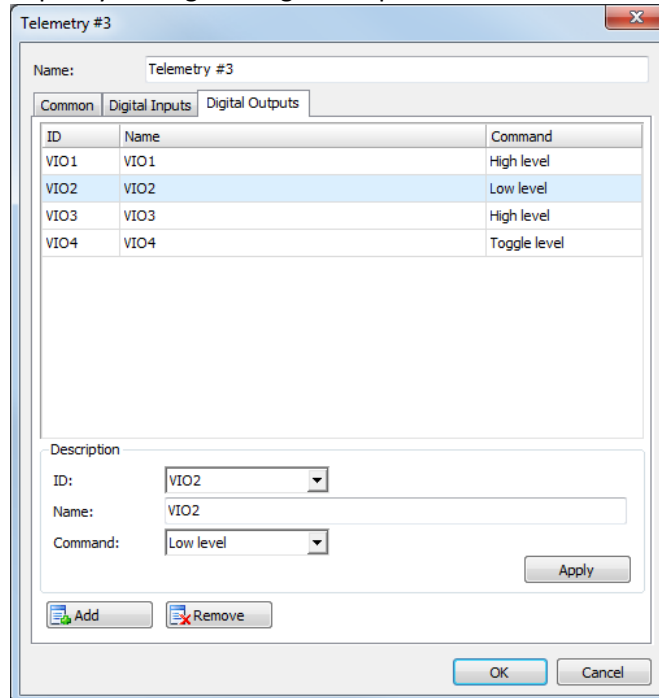
- **Display as the Subscriber state** – go to **Telemetry** page to see selected radio telemetry data:



- **Auto reset state** - select to reset the telemetry VIO automatically;
- **Request location of subscriber** – select to enable subscriber GPS positioning.

Click «**Apply**» button to apply settings to selected inputs.

On the «**Digital Outputs**» tab specify settings for digital outputs:



Telemetry #3

Name: Telemetry #3

Common | Digital Inputs | Digital Outputs

ID	Name	Command
VIO1	VIO1	High level
VIO2	VIO2	Low level
VIO3	VIO3	High level
VIO4	VIO4	Toggle level

Description

ID: VIO2

Name: VIO2

Command: Low level

Apply

Add Remove

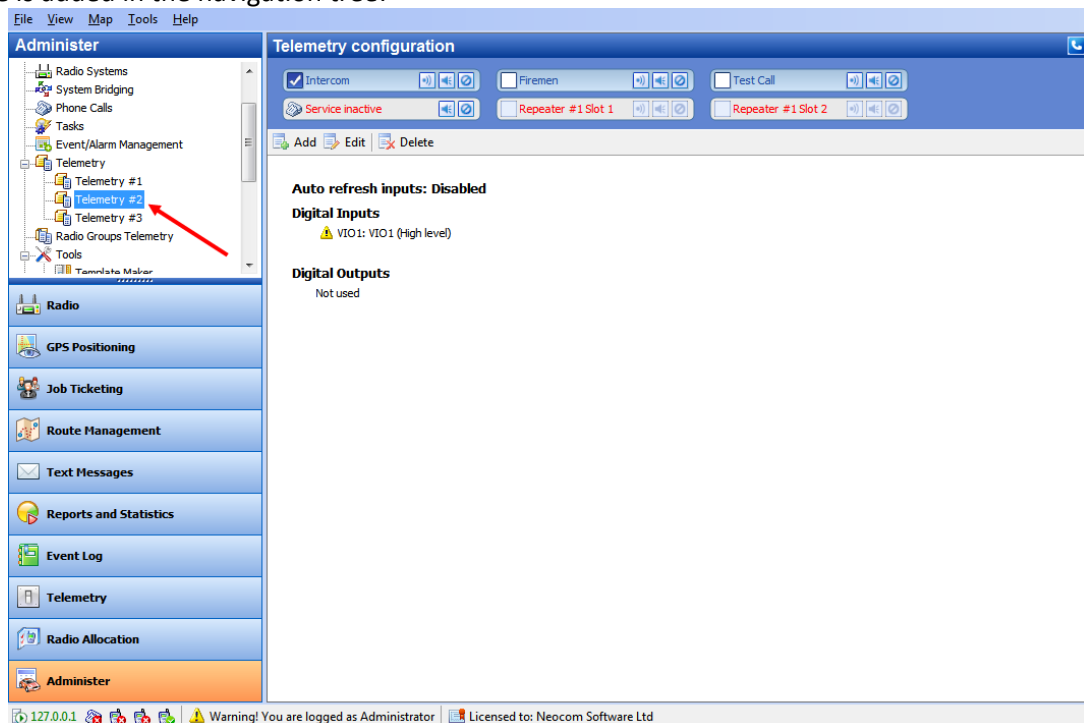
OK Cancel

Click «**Add**» button to set VIO (Virtual Configured PIN):

- **ID** – select VIO in the dropdown list to set its parameters;
- **Name** – specify VIO name to display in the Dispatch Console;
- **Command** – specify a command for selected VIO in the dropdown list.

Click «**Apply**» button to apply settings to selected inputs.

The profile is added in the navigation tree:



File View Map Tools Help

Administer

- Radio Systems
 - System Bridging
 - Phone Calls
 - Tasks
 - Event/Alarm Management
 - Telemetry
 - Telemetry #1
 - Telemetry #2
 - Telemetry #3
 - Radio Groups Telemetry
- Tools
 - Tamara's Makar

Radio

GPS Positioning

Job Ticketing

Route Management

Text Messages

Reports and Statistics

Event Log

Telemetry

Radio Allocation

Administer

Telemetry configuration

Intercom ☒ Firemen ☐ Test Call ☐

Service inactive ☐ Repeater #1 Slot 1 ☐ Repeater #1 Slot 2 ☐

Add Edit Delete

Auto refresh inputs: Disabled

Digital Inputs

⚠ VIO1: VIO1 (High level)

Digital Outputs

Not used

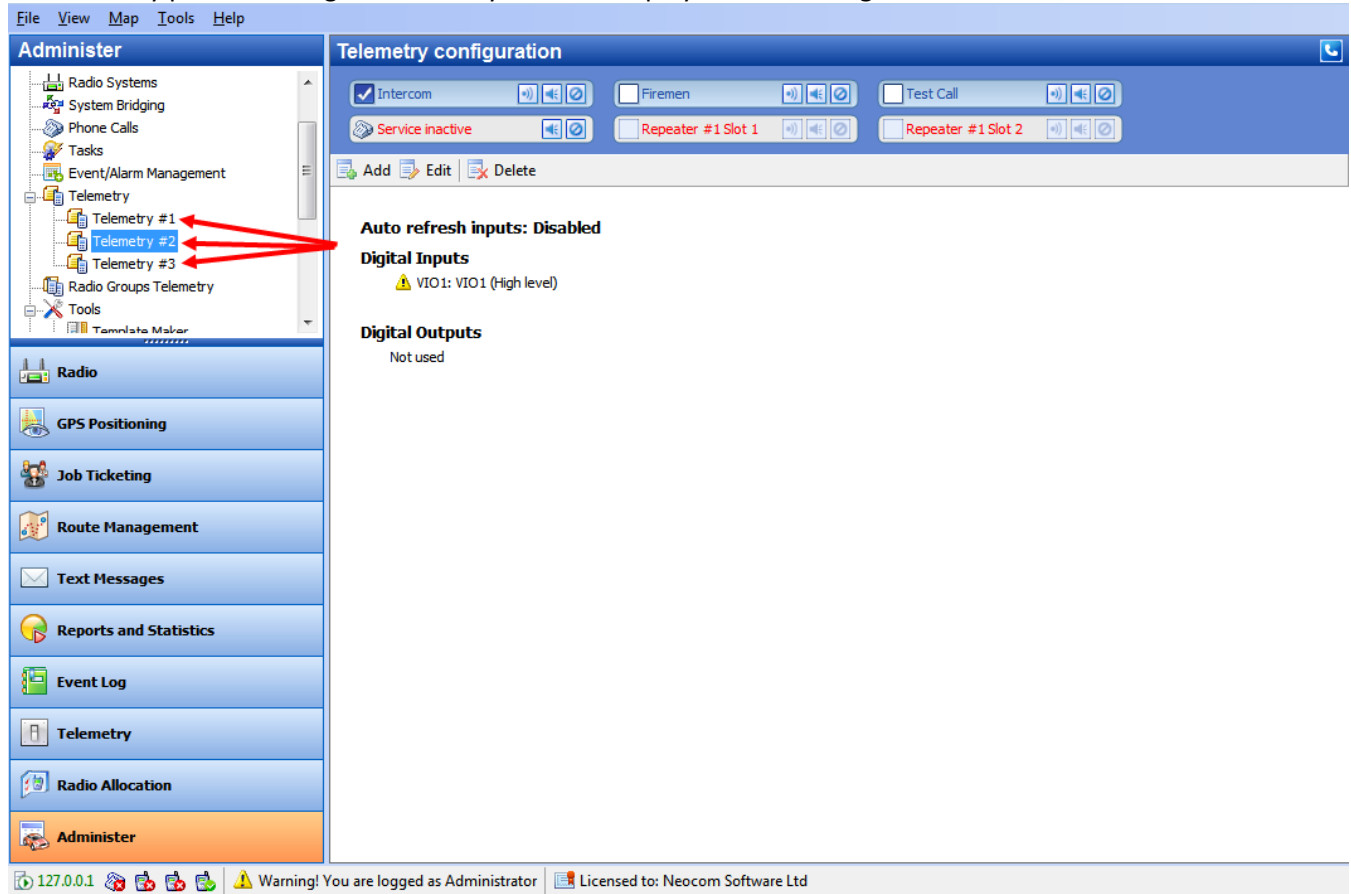
127.0.0.1 Warning! You are logged as Administrator Licensed to: Neocom Software Ltd

Note: For editing telemetry profile for Radio Groups only «**Digital Outputs**» tab available.

Telemetry #N

Go to **Telemetry (1)** , **Telemetry #N (2)** to add and configure personal Telemetry profiles.

All telemetry profiles configured in the system are displayed in the Navigation Tree:



The screenshot displays the Neocom Software interface for Telemetry configuration. On the left, the 'Administer' menu is visible, with 'Telemetry #2' selected. The main window shows the 'Telemetry configuration' section. At the top, there are checkboxes for 'Intercom', 'Firemen', and 'Test Call'. Below these are 'Service inactive', 'Repeater #1 Slot 1', and 'Repeater #1 Slot 2'. A toolbar with 'Add', 'Edit', and 'Delete' icons is present. The configuration details include 'Auto refresh inputs: Disabled', 'Digital Inputs' (VIO1: VIO1 (High level)), and 'Digital Outputs' (Not used). The bottom status bar indicates version 127.0.0.1, a warning about being logged as Administrator, and licensing information for Neocom Software Ltd.

To add and edit personal telemetry profiles follow the steps as described in [Radio Groups Telemetry](#) page.

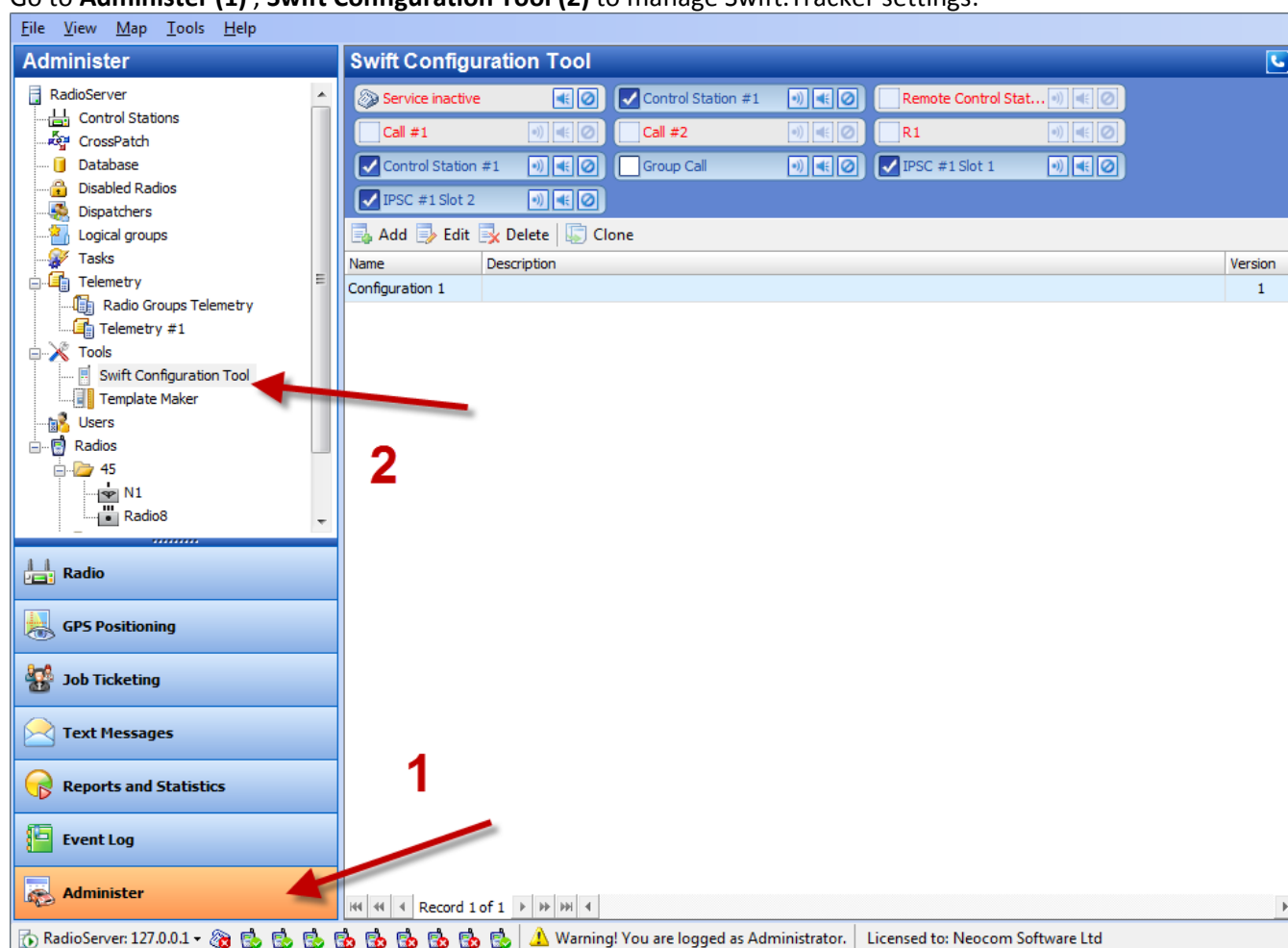
Tools

On the «**Tools**» page you can setup **Swift.Tracker** configurations and **Extended Comments/Extended Messages** settings.

Swift.Tracker Configuration Tool

In general, a MOTOTRBO™ portable radio comes with a standard option board factory- installed to the radio. Generic Option Board replaces this standard option board, new radio like XPR 7550 come with Generic Option Board already installed. Generic Option Board can be flashed with custom firmware to provide additional functionality: ManDown, No Movement, Crash Detect, Lone Worker and event-driven GPS functionality. Event-driven GPS feature allows to collect GPS data more frequently, store and forward GPS data by event, also it allows to collect and store GPS data while radio is out of radio coverage to request GPS data when comes back to radio coverage.

Go to **Administer (1)** , **Swift Configuration Tool (2)** to manage Swift.Tracker settings:



The screenshot shows the Administer application window. On the left is a tree view with categories like RadioServer, Control Stations, Database, etc. The 'Tools' category is expanded, and 'Swift Configuration Tool' is highlighted with a red arrow and the number '2'. At the bottom of the left sidebar, the 'Administer' button is highlighted with a red arrow and the number '1'. The main window displays the 'Swift Configuration Tool' configuration page, which includes a status bar at the top (Service inactive), a list of control stations and calls, and a table with one configuration entry.

Name	Description	Version
Configuration 1		1

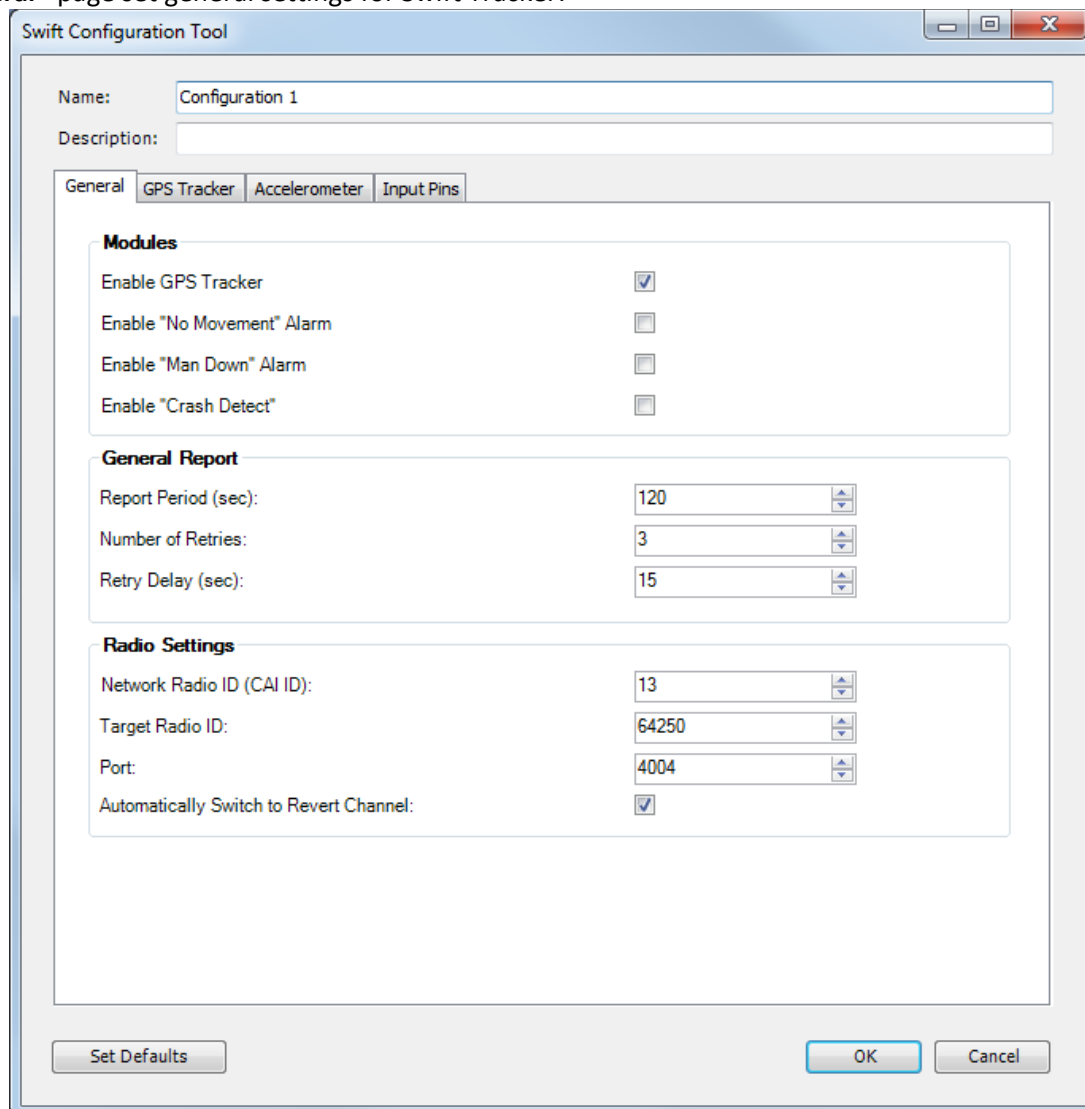
At the bottom of the window, a status bar shows 'RadioServer: 127.0.0.1', a warning message 'Warning! You are logged as Administrator.', and the license information 'Licensed to: Neocom Software Ltd'.

Click «**Add**» button to add configuration for Swift Tracker.

- **Name** - select name for configuration to apply it to radio or group of radios;
- **Description** - add description for configuration;

Click «**Set Defaults**» button - select to enable default settings for GOB.

On «**General**» page set general settings for Swift Tracker:



Modules

- **Enable GPS Tracker**- when GPS enabled radio sends data to TRBOnet RadioServer according individual GOB settings.
- **Enable "No Movement" Alarm** - select to enable No Movement feature;
- **Enable "Man Down"** - select to enable Man Down feature.

General report

- **Report period (sec.)** - select time period for data transfer to the server;
- **Number of retries** - specify the number of retries when data transfer is impossible. If the channel is busy data transfer to the server is priority and TX Interrupt feature will be enabled automatically;
- **Retry delay** - select time period between data transfer retries.

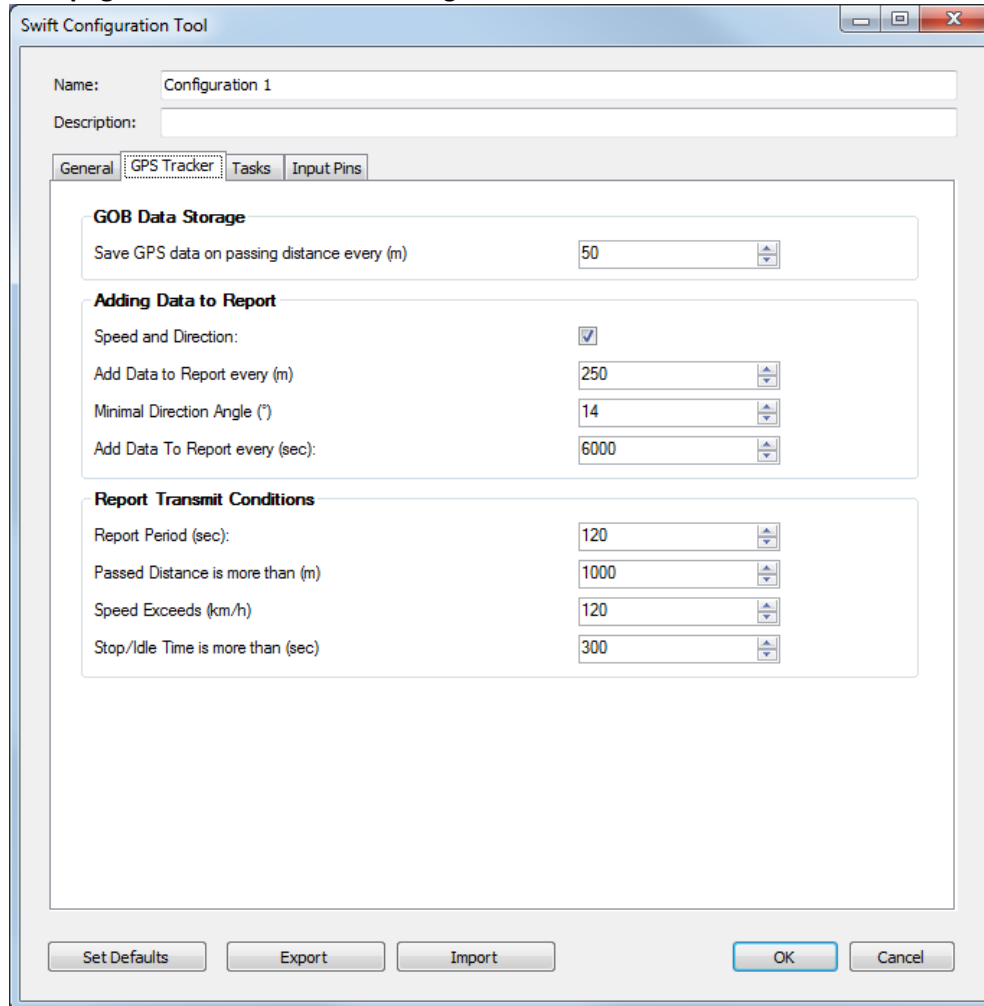
Radio settings

- **Network radio ID (CAI ID)** - select your RadioServer PC network radio ID. ID=13 is a default value to route packet to RadioServer PC, value 12 will send packets to a control station.
- **Target Radio ID** - select target radio ID for data transfer. In case of direct connection to repeater select the TRBOnet server ID (TRBOnet peer ID).
- **Port** - select port for data transfer.

Automatically Switch to Revert Channel - select to transfer data via revert channel in automatically mode.

Note: if radio does not have a revert channel this option must be disabled.

Go to «GPS Tracker page» to set GPS Tracker settings:



GOB data Storage

- **Save GPS data on passing distance every (m)** - specify the distance. When the indicated distance is passed radio saves the data in Option Board memory but GPS data are not added in the report;

Adding data to report

- **Speed and Direction** - select to receive radio speed and direction data;
- **Add data to report every (m)** - specify the distance. When indicated distance is passed radio adds data to the report. At this case the data is saved in the report to send the report according to selected time period (see «**Report Period** » option).

Note: Number value Add data to report every (m) must exceed number value Save GPS data on passing distance every (m).

- **Minimal direction angle** - select minimal direction angle to add data to the report automatically (if the radio reverses the direction the current data is added to the report automatically and next data recording is started).
- **Add data to report every (sec.)** - specify time period for the report. When the indicated time period is passed radio adds the data to the report.

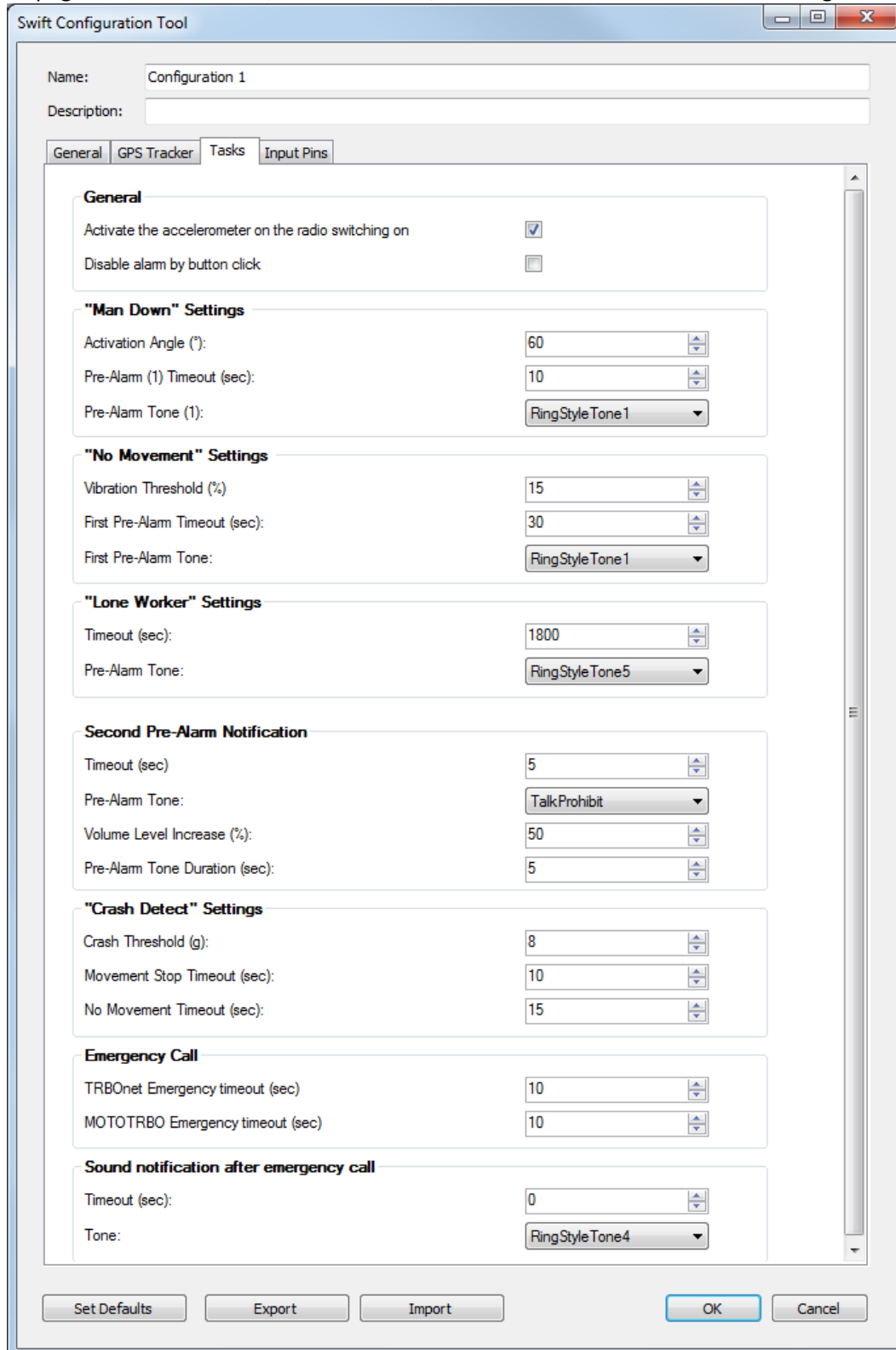
Report transmit conditions (custom report settings)

- **Report period (sec.)** – set time period to send the report;
- **Passed distance is more than (m)** - type in the distance. When the indicated distance is passed the Option Board sends the report.

Note: Number value **Add data to report every (m)** must exceed number value **Save GPS data on passing distance every (m)**.

- **Speed exceeds** - select speed. When current speed is more than the indicated one, radio sends data to the TRBOnet Dispatch Software server;
- **Stop/Idle Time is more than (sec.)** - select stop/idle time. When stop/idle time is more than the indicated one radio sends data to TRBOnet RadioServer.

Go to «Tasks» page to set **Man Down, No Movement, Lone Worker** and **Crash Detect** settings:



The screenshot shows the 'Swift Configuration Tool' window with the 'Tasks' tab selected. The configuration is for 'Configuration 1'. The settings are as follows:

- General**
 - Activate the accelerometer on the radio switching on: ☒
 - Disable alarm by button click: ☐
- "Man Down" Settings**
 - Activation Angle (°): 60
 - Pre-Alarm (1) Timeout (sec): 10
 - Pre-Alarm Tone (1): RingStyleTone1
- "No Movement" Settings**
 - Vibration Threshold (%): 15
 - First Pre-Alarm Timeout (sec): 30
 - First Pre-Alarm Tone: RingStyleTone1
- "Lone Worker" Settings**
 - Timeout (sec): 1800
 - Pre-Alarm Tone: RingStyleTone5
- Second Pre-Alarm Notification**
 - Timeout (sec): 5
 - Pre-Alarm Tone: TalkProhibit
 - Volume Level Increase (%): 50
 - Pre-Alarm Tone Duration (sec): 5
- "Crash Detect" Settings**
 - Crash Threshold (g): 8
 - Movement Stop Timeout (sec): 10
 - No Movement Timeout (sec): 15
- Emergency Call**
 - TRBOnet Emergency timeout (sec): 10
 - MOTOTRBO Emergency timeout (sec): 10
- Sound notification after emergency call**
 - Timeout (sec): 0
 - Tone: RingStyleTone4

Buttons at the bottom: Set Defaults, Export, Import, OK, Cancel.

- **Activate the accelerometer on the radio switching on** - select to enable accelerometer;
- **Disable alarm by button click** – select to allow radio subscriber disable alarm notification by pressing any button on the radio.

"Man Down" settings

- **Activation angle** - select activation angle to enable Man Down feature;
- **Pre-Alarm (1) Timeout (sec.)** - select time period preceding pre-alarm Tone 1;
- **Pre-Alarm tone (1)** - select pre-alarm tone. All pre-alarm tones can be found in radio's code plug configuration.

"No Movement" Settings

- **Vibration Threshold (%)** - select max. vibration threshold for No Movement feature;
- **Pre-Alarm Timeout (sec.)** - select time period preceding pre-alarm Tone 1;
- **Pre-Alarm tone** - select pre-alarm tone. All pre-alarm tones can be found in radio's code plug configuration.

«Lone Worker» Settings

- **Timeout (sec.)** – select time period to enable Lone Worker alarm;
- **Pre-alarm tone** - select pre-alarm tone. All pre-alarm tones can be found in radio's code plug configuration;

Second Pre-Alarm Notification. When pre-alarm tone (1) activates for **Man Down**, **No Movement** and **Lone Worker**, and there was no user's activity (the radio remains unchanged), the second pre-alarm tone activates:

- **Timeout (sec.)** - select time period preceding pre-alarm Tone 2;
- **Pre-Alarm tone** - select pre-alarm tone. All pre-alarm tones can be found in radio's code plug configuration;
- **Volume Level Increase (%)** - select the percentage of the Volume Level Increase for pre-alarm Tone 2;
- **Pre-Alarm Duration (sec.)** - select pre-alarm Tone 2 duration.

«Crash Detect» Settings:

- **Crash Threshold (g)** - select acceleration changing value to enable Crash Detect alarm notification;
- **Movement Stop Timeout** – select the time period of movement stop to enable Crash Detect alarm notification;
- **No Movement Timeout** - select the time period of the radio without any movement to enable Crash Detect alarm notification;

Emergency call

- **TRBOnet Emergency Timeout (sec.)** - select time period preceding emergency tone to the Dispatch Console for **Man Down**, **No Movement** and **Lone Worker** options;
- **MOTOTRBO Emergency timeout (sec.)** - select time period preceding emergency tone to the Dispatch Console.

Note: MOTOTRBO Emergency Alarm should be set in Radio's code plug.

Sound notification after emergency call

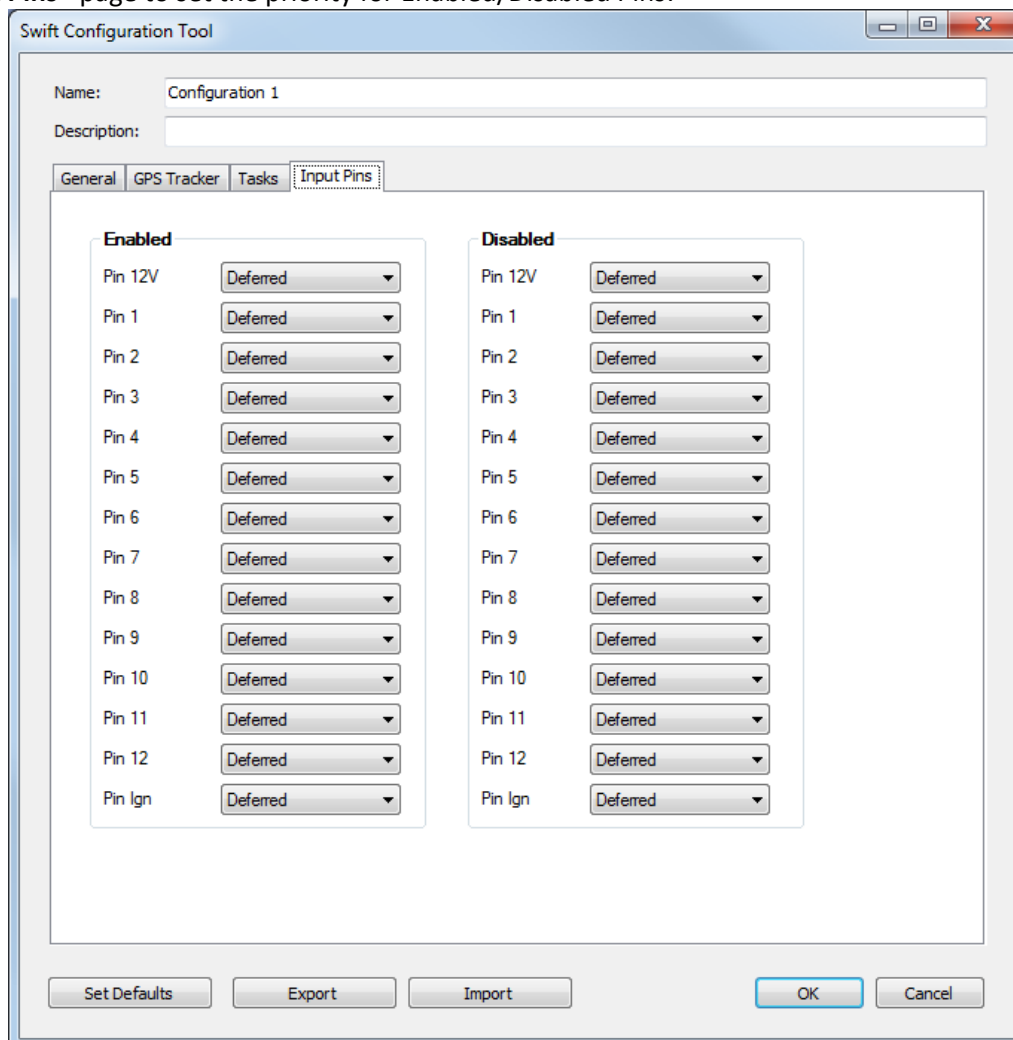
- **Timeout (sec.)** – select time period to repeat the alarm notification. To stop the alarm notification Dispatcher should disable alarm notification;
- **Tone** – select the notification tone. All tones can be found in radio's code plug configuration.

Click «**Set defaults**» button to apply default values.

Click «**Import**» button to import Swift .Tracker configuration from file.

Click «**Export**» button to save Swift .Tracker configuration as file to the PC.

Go to «**Input Pins**» page to set the priority for Enabled/Disabled Pins:



The image shows the 'Swift Configuration Tool' window with the 'Input Pins' tab selected. The window has fields for 'Name' (Configuration 1) and 'Description'. Below are tabs for 'General', 'GPS Tracker', 'Tasks', and 'Input Pins'. The 'Input Pins' tab contains two columns: 'Enabled' and 'Disabled'. Each column lists pins (Pin 12V, Pin 1 through Pin 12, and Pin Ign) with a dropdown menu set to 'Deferred'. At the bottom are buttons for 'Set Defaults', 'Export', 'Import', 'OK', and 'Cancel'.

Select programmed Pin in Enabled/Disabled Pins table.

Select data transmission priority for Pin:

- **Deferred** - to send the data into current packet;
- **In Memory** - to save the data in the GOB memory;
- **Immediately** - transmission interrupt - oriented. Select **Immediately** to transmit the data via free channel with radio channel priority;
- **Extremely** - transmission via radio channel and GSM channel simultaneously.

The PIN options are model dependent. All available PINs for the radio can be programmed in Radio's codeplug configuration (See **Accessories** , **GPIO Physical PINs**)

Note: additional PINs are available when GSM Swift.Tracker connected only. For more details contact technical support.

Click «**OK**» to save the settings.

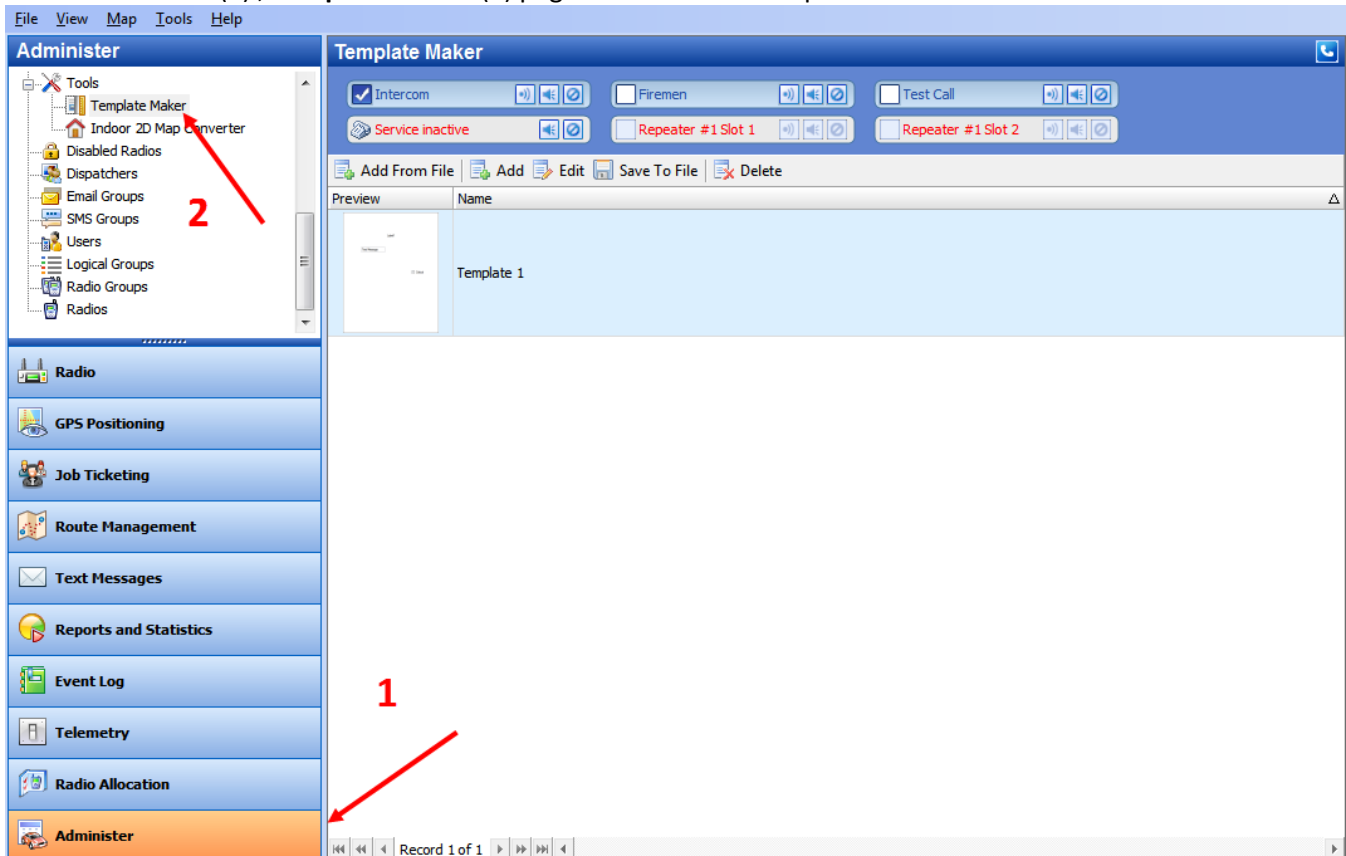
Templates for Extended Messages

Template Maker can be used for Extended Messages and Extended Notes.

Extended Messages - is a special function allowing the users to send detailed preconfigured templates containing necessary information to each other with the help of the special TRBOnet Dispatch Software application.

This service was created especially for the clients that need to use more detailed and structured messages for their work. If the standard messages are not enough to contain all the information you need to send you may use Extended Messages service.

Go to **Administer** (1) , **Template Maker** (2) page to create new template:

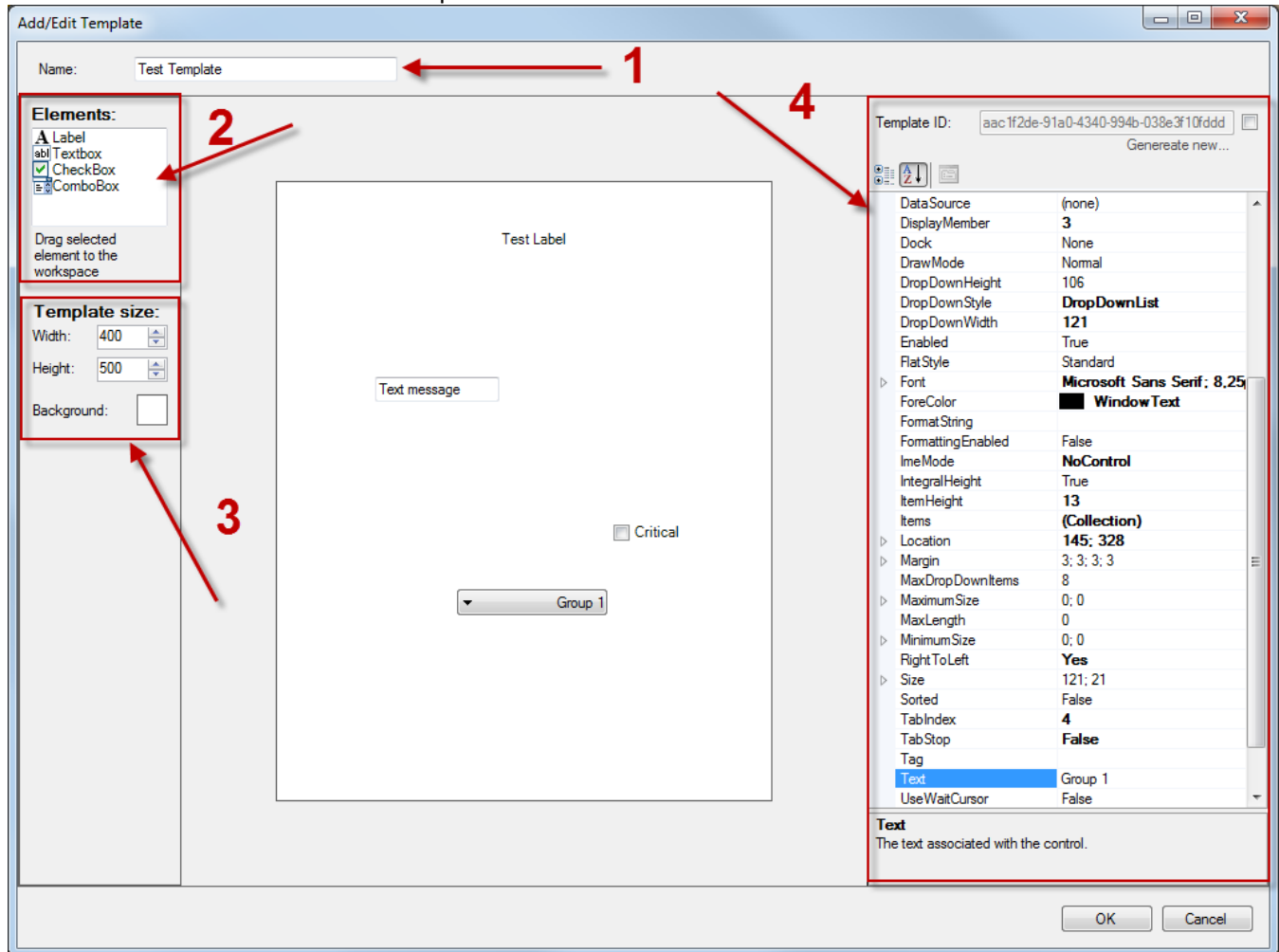


Click «Add from file» button to add a template from file.

Note: before adding the template from file save created template to custom directory.

Select the directory you saved the template and click «OK» to add the file.

Click «Add» button to create new template:



1 – Specify new template name to display in the Dispatch Console;

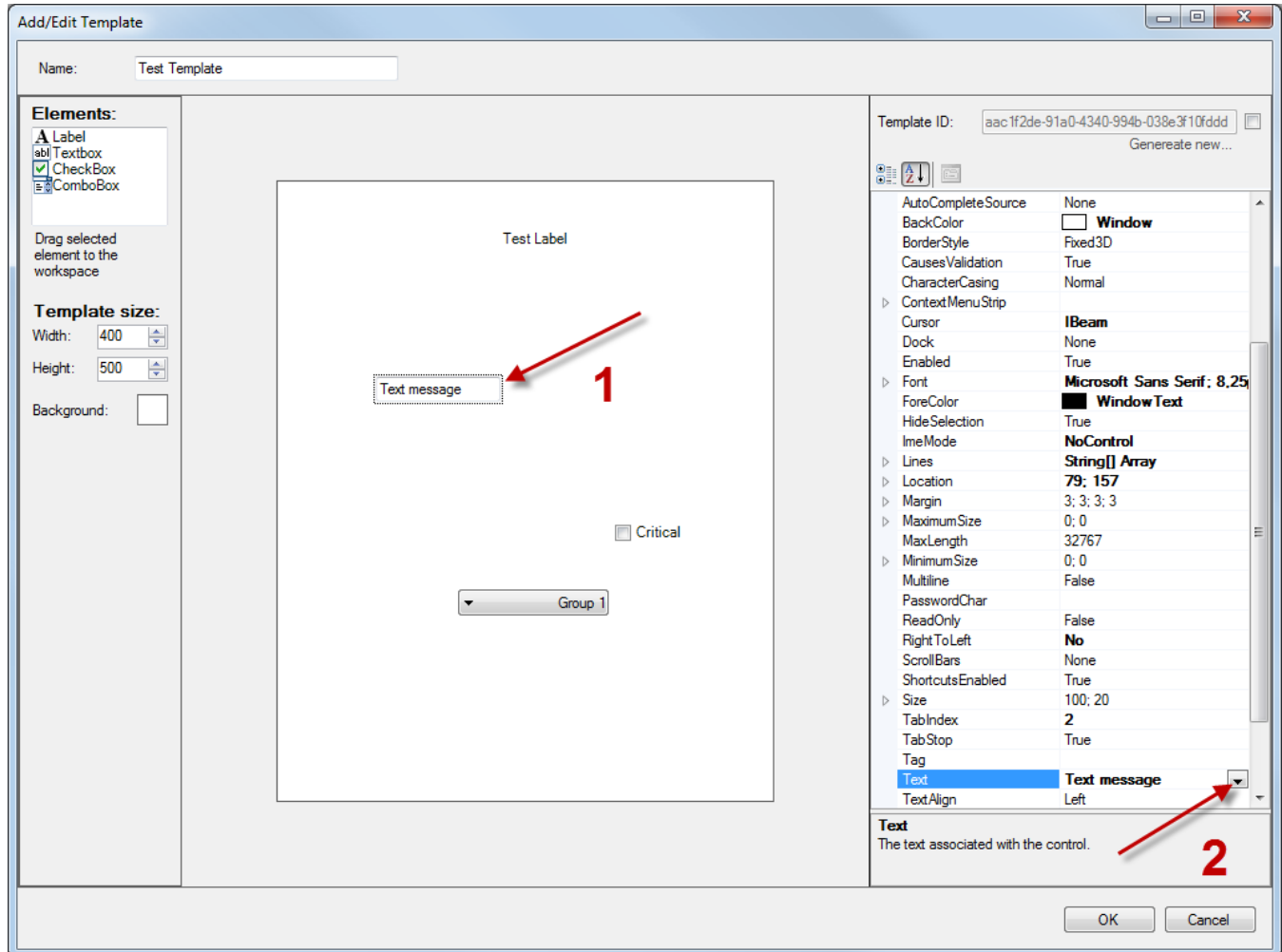
2 – Select elements to add in new template. Drag and drop the selected element to the mail template field;

3 – Specify template size and background color;

4 – Click element on the template. On the left side of the template window displays selected element properties table.

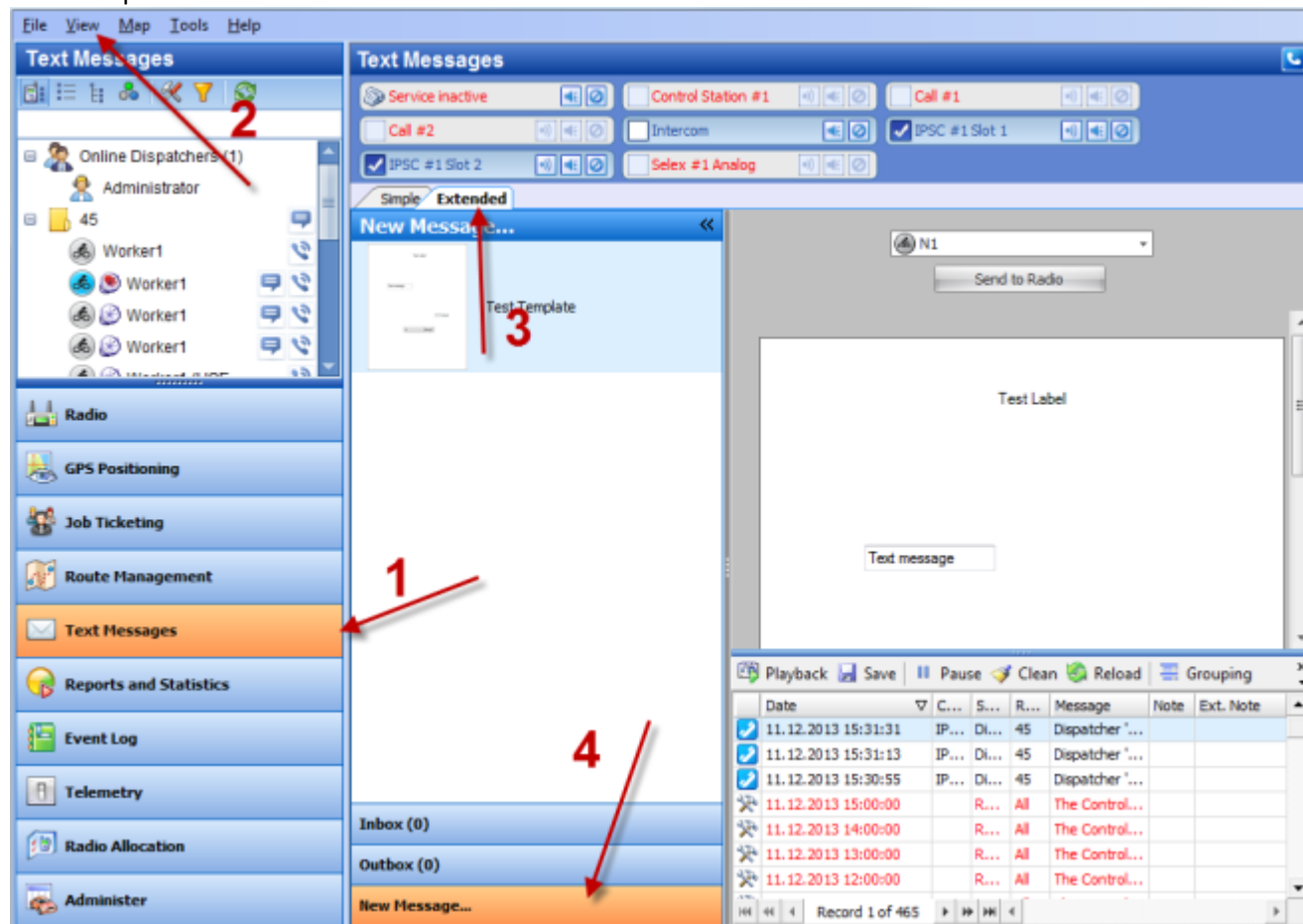
Select property in the table and read the prompt at the bottom of the table.

How to add a text for selected element:



- Click selected element on the template, e.g. textbox (1);
- Go to element properties table and select «Text» field (2);
- Type in text in the field.
- Click «OK» to save the template.

Send template to radio:

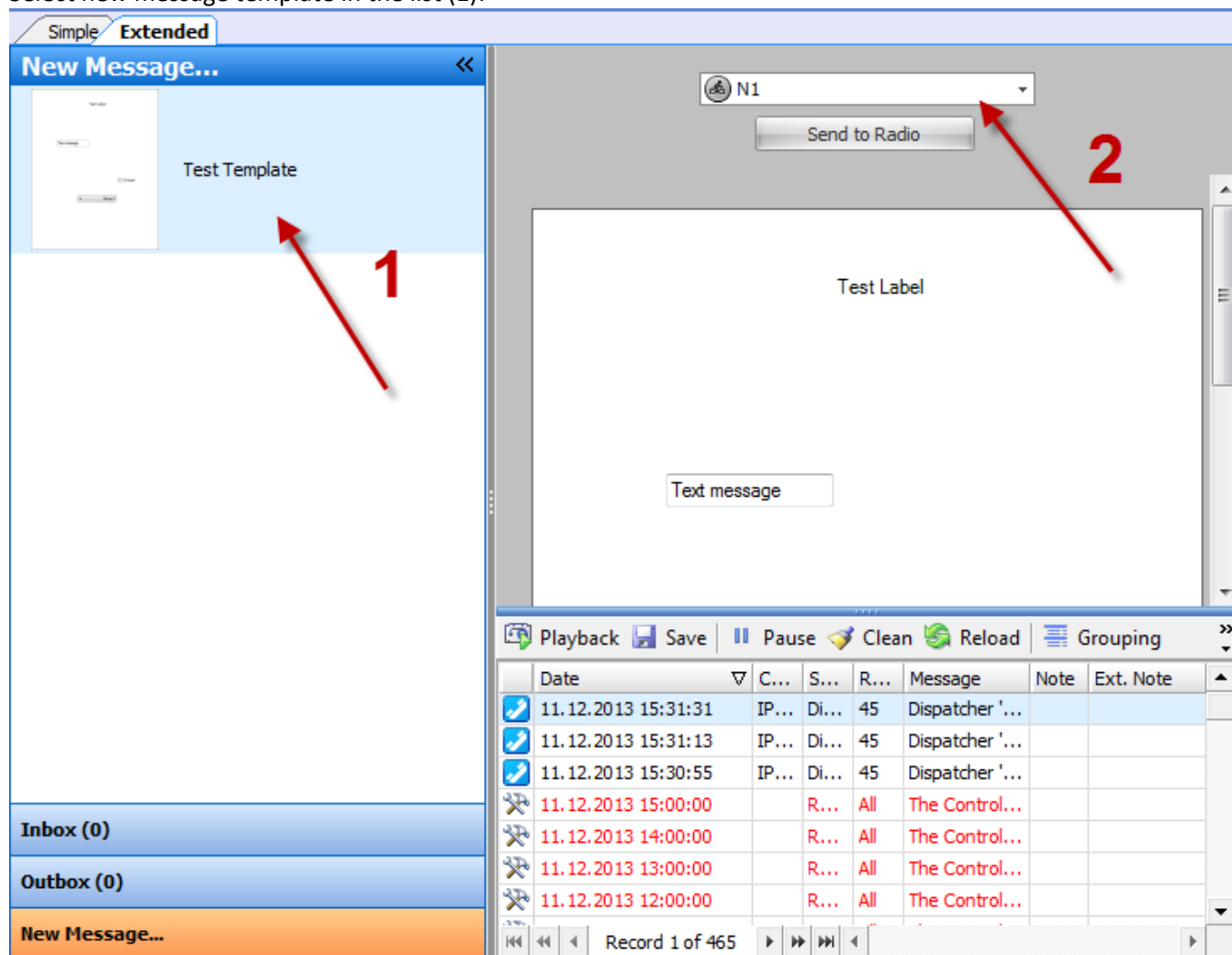


Text Messages (1) , View (2)

Select «Show Extended Messages» option.

Go to «Extended Messages» tab (3) , New message (4).

Select new message template in the list (1):



The screenshot shows the 'New Message...' dialog in the TRBOnet software. On the left, under the 'Extended' tab, there is a sidebar with buttons for 'Inbox (0)', 'Outbox (0)', and 'New Message...'. A red arrow labeled '1' points to the 'Test Template' button. The main area on the right has a dropdown menu with 'N1' and a 'Send to Radio' button, with a red arrow labeled '2' pointing to it. Below this is a large text area with 'Test Label' and a 'Text message' input field. At the bottom, there is a table of message logs with columns for Date, C..., S..., R..., Message, Note, and Ext. Note. The table shows several entries with timestamps and messages like 'Dispatcher ...' and 'The Control...'. Navigation buttons like 'Playback', 'Save', 'Pause', 'Clean', 'Reload', and 'Grouping' are also visible.

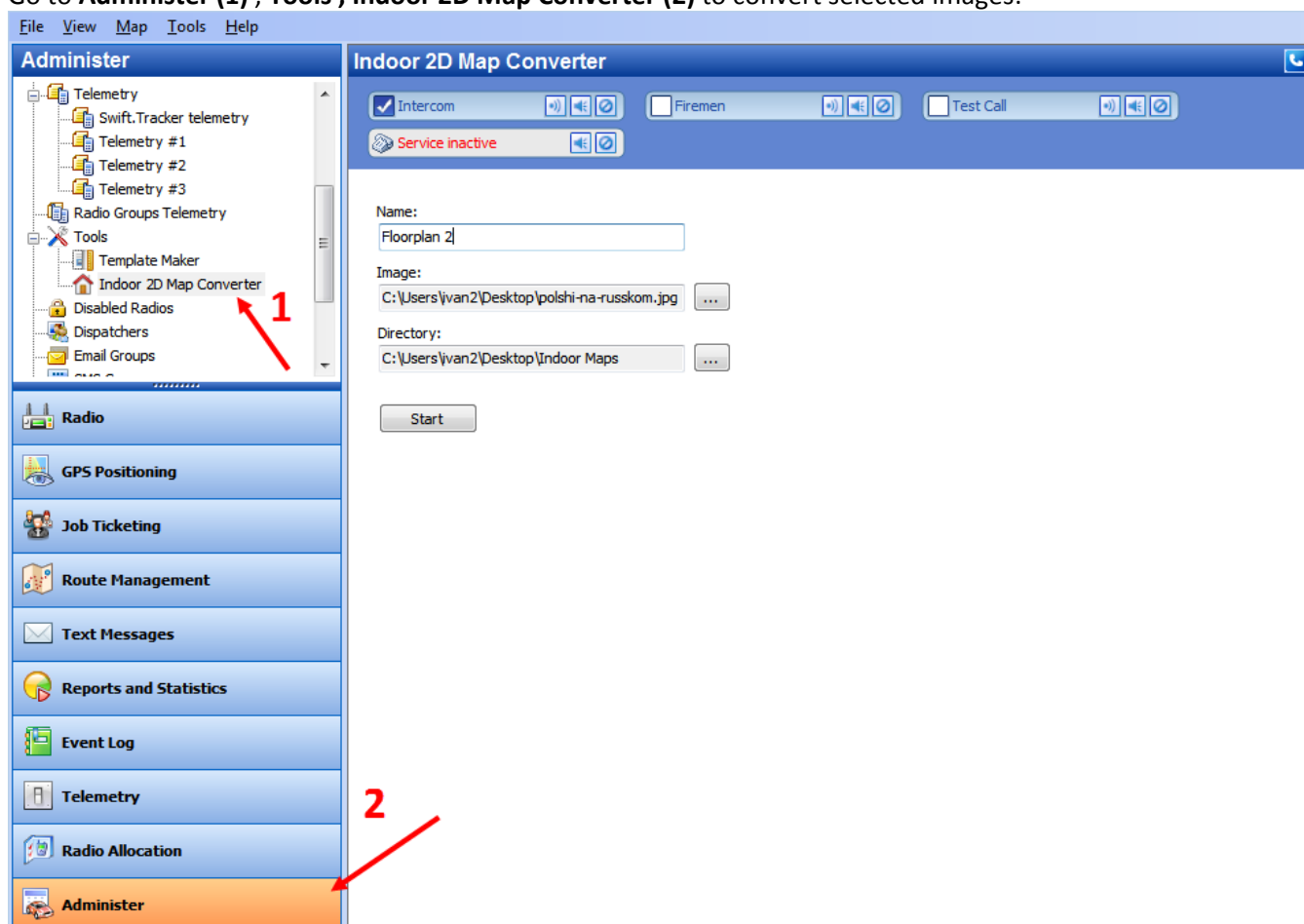
Date	C...	S...	R...	Message	Note	Ext. Note
11.12.2013 15:31:31	IP...	Di...	45	Dispatcher '...		
11.12.2013 15:31:13	IP...	Di...	45	Dispatcher '...		
11.12.2013 15:30:55	IP...	Di...	45	Dispatcher '...		
11.12.2013 15:00:00		R...	All	The Control...		
11.12.2013 14:00:00		R...	All	The Control...		
11.12.2013 13:00:00		R...	All	The Control...		
11.12.2013 12:00:00		R...	All	The Control...		

Select a radio in the dropdown list to send the template (2).
 Click «**Send to Radio**» button to send the template to a radio.

Indoor 2D Map Converter

TRBOnet Dispatch Software provides Map Converter to use custom images as Indoor 2D Floor plans. The tool allows to convert images to .bmap format supported as maps for Indoor Positioning.

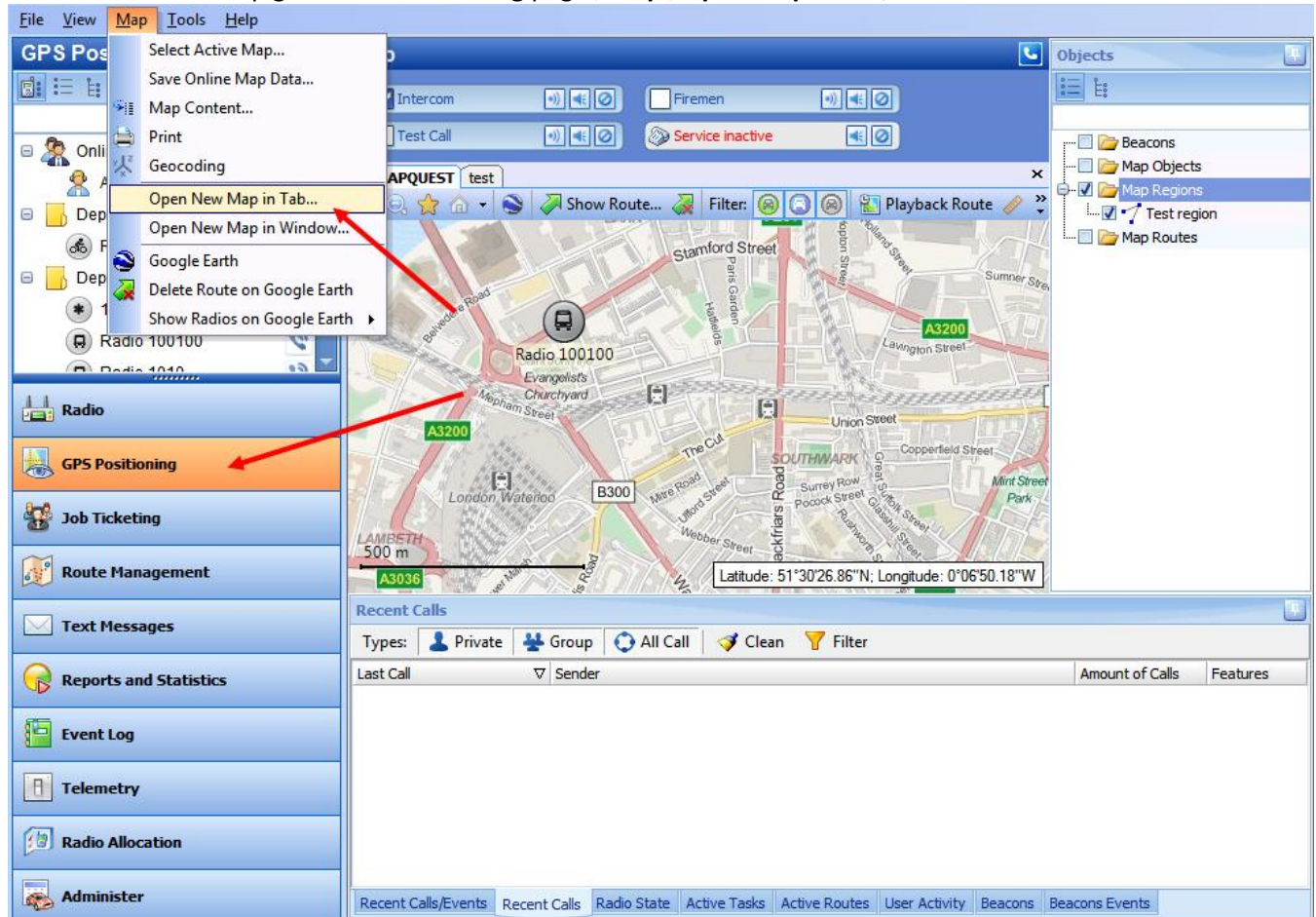
Go to **Administer (1)** , **Tools** , **Indoor 2D Map Converter (2)** to convert selected images:



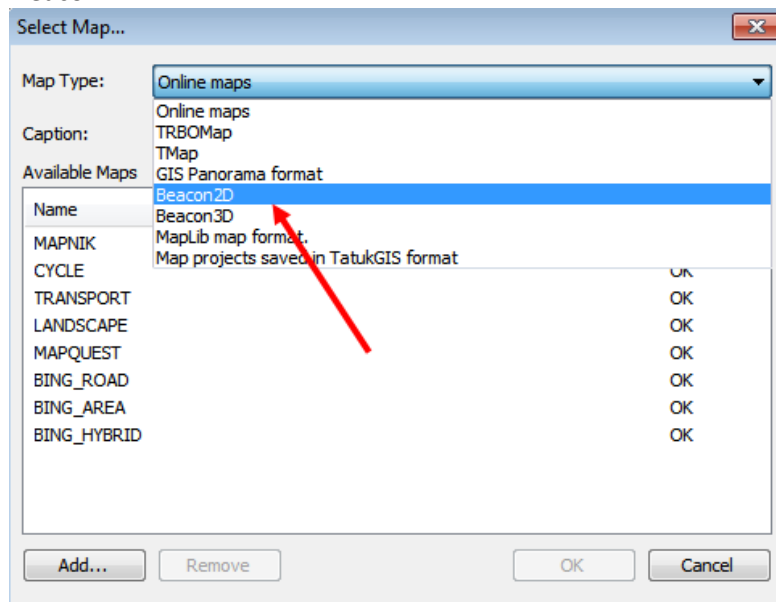
- **Name** – select name for new Indoor 2D Map;
- **Image** – select image on your PC. PNG, Jpeg, tiff, gif formats supported;
- **Directory** – select directory to save converted Indoor 2D map.

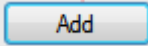
Click «**Start**» button to convert the image.

To use converted map go to **GPS Positioning** page , **Map** , **Open Map in tab/window**:



Then select map type – Beacon 2D:



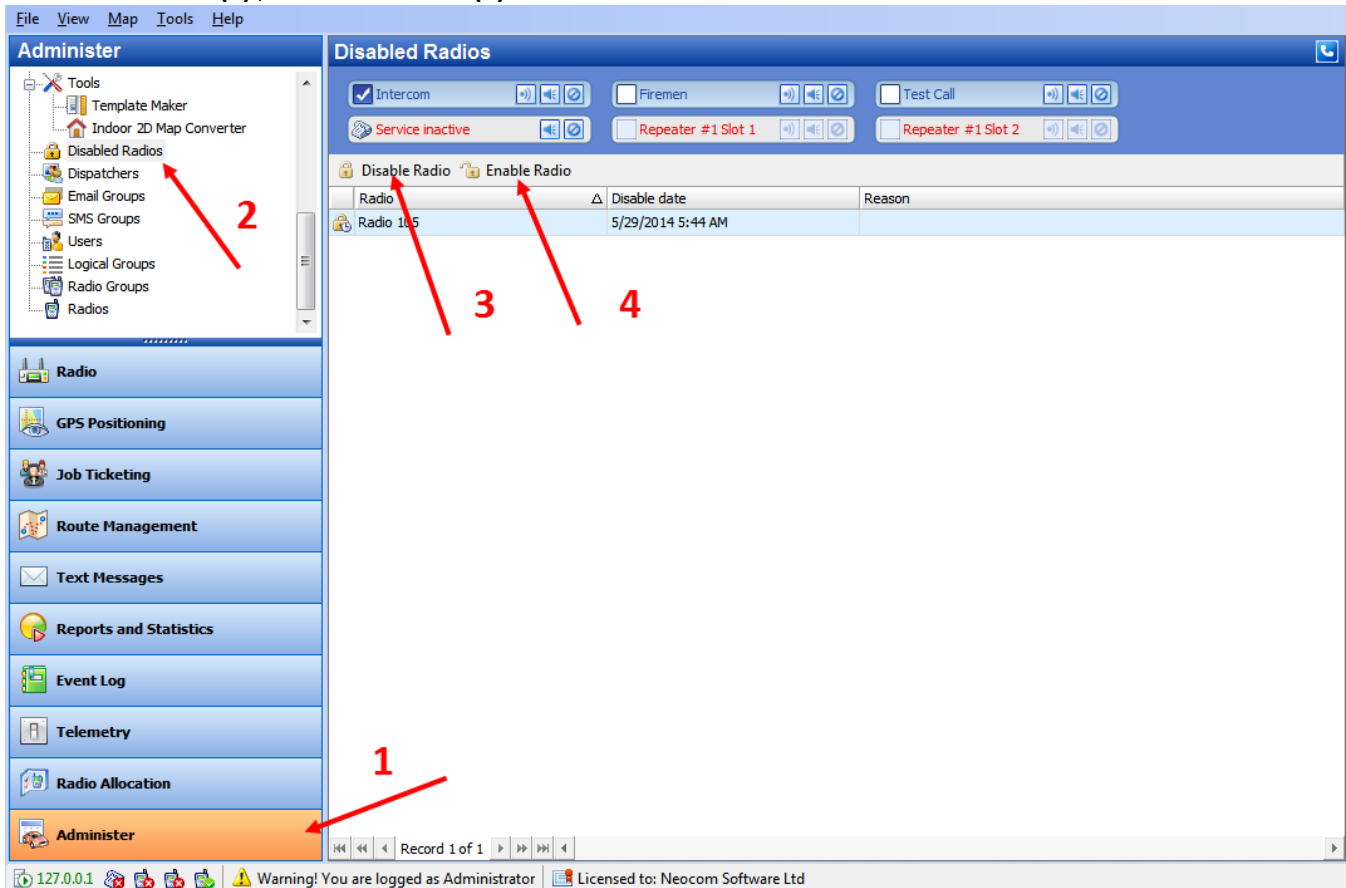
Click  button to add a new map and select map you have just converted. Click «OK» to open new Indoor map.

Disabled Radios

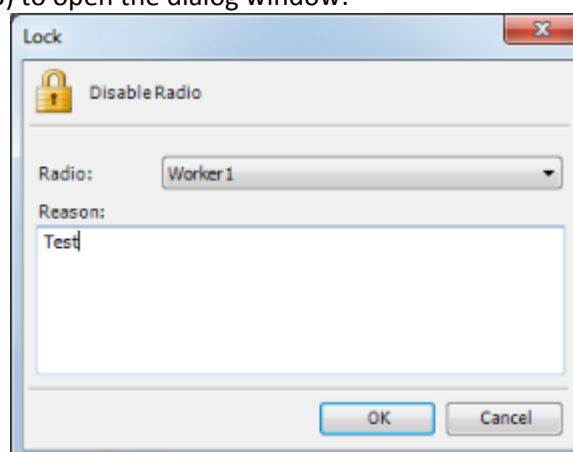
TRBOnet Dispatch Software provides the **Stun Kill Passive** function – to disable a radio even a radio is offline. The system will disable an offline radio as soon as it gets available.

Note: Dispatcher can disable a radio when he has relevant Access Rights (for more details on adding and editing Dispatchers see [Dispatchers](#) section).

Go to **Administer (1)** , **Disabled Radios (2)** to disable selected radio:

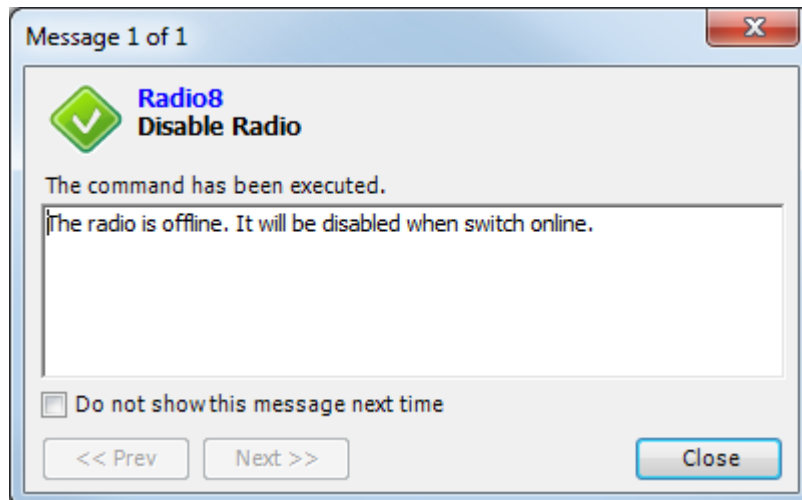


Click «**Disable Radio**» button (3) to open the dialog window:



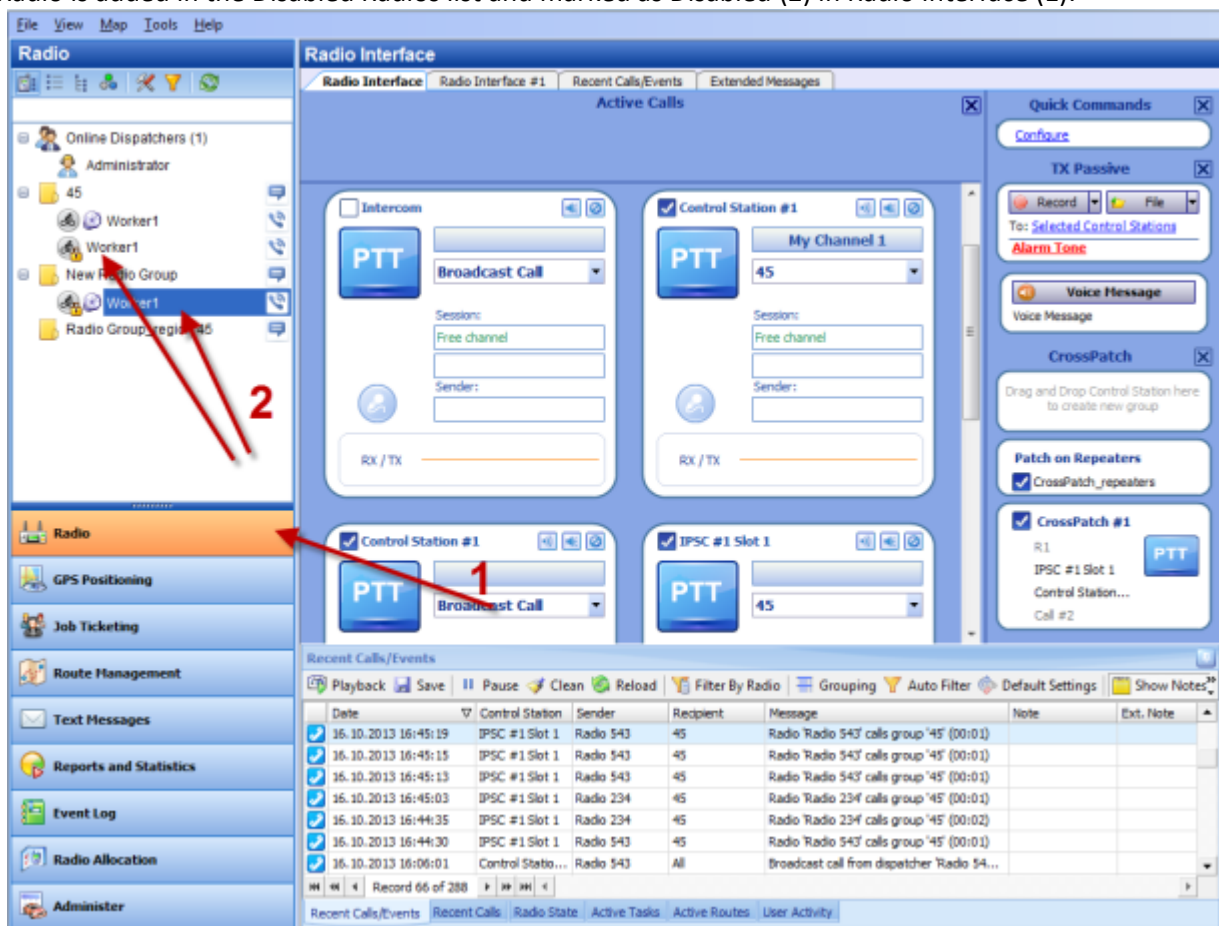
Select a Radio in the dropdown list and specify a reason to disable.

Click «OK» to disable a radio:



Selected Radio disabled.

The Radio is added in the Disabled Radios list and marked as Disabled (2) in Radio Interface (1):



Click «**Enable Radio**» button (4) to enable selected radio.

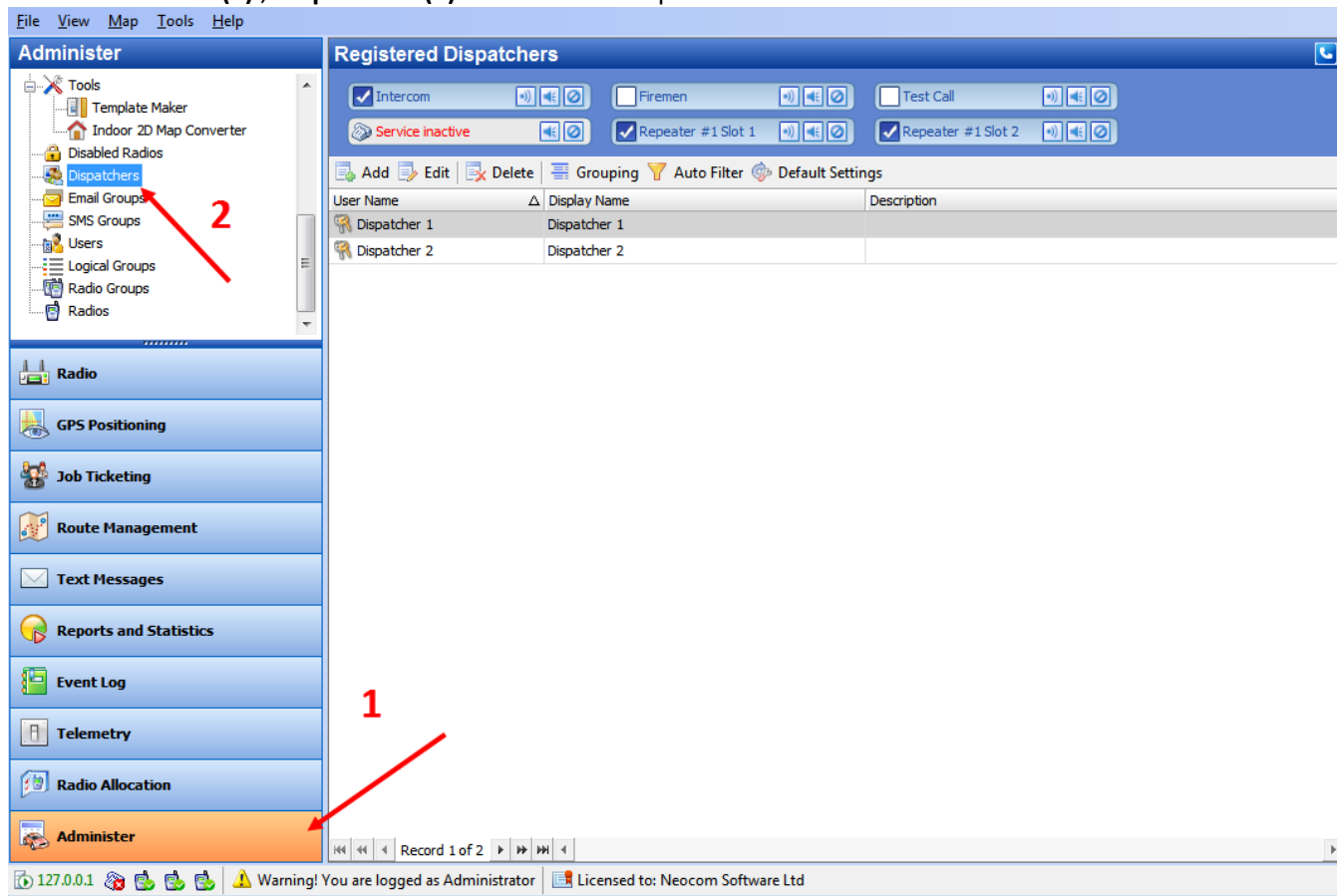
Select a Radio in the dropdown list and specify a reason to enable.

Click «OK» to enable a radio.

Dispatchers

Administrator can add, edit and delete Dispatchers in the system.

Go to **Administer (1)** , **Dispatchers (2)** to work with Dispatchers:



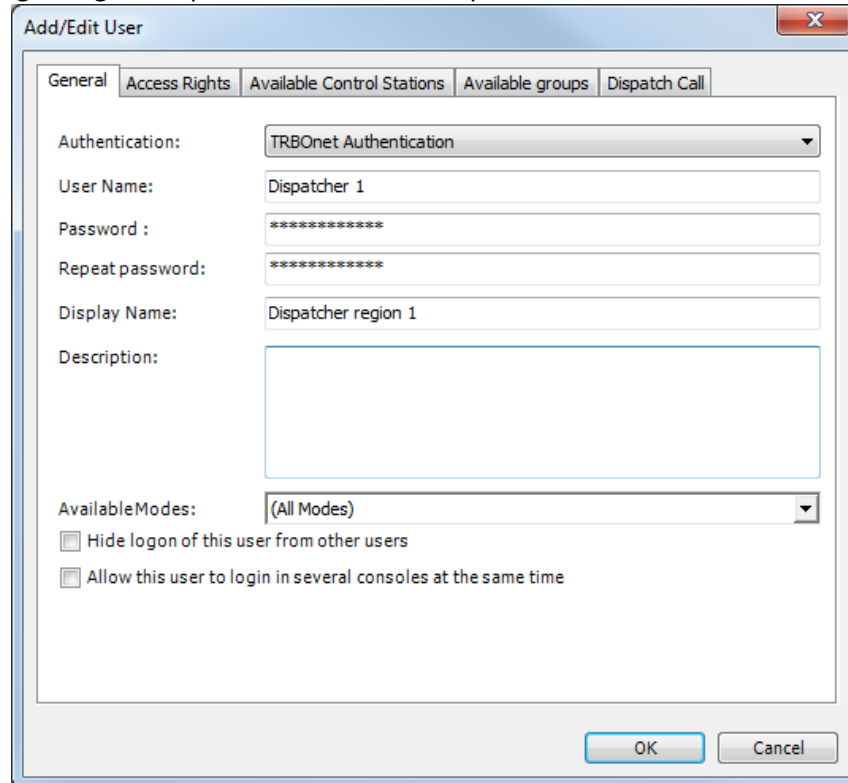
The screenshot shows the TRBOnet Administer web application. The left sidebar contains a 'Tools' menu with 'Dispatchers' highlighted (indicated by red arrow 2). Below the sidebar, the 'Administer' button is highlighted in orange (indicated by red arrow 1). The main content area is titled 'Registered Dispatchers' and contains a table with the following data:

User Name	Display Name	Description
Dispatcher 1	Dispatcher 1	
Dispatcher 2	Dispatcher 2	

At the bottom of the interface, a status bar shows the IP address 127.0.0.1, a warning message 'Warning! You are logged as Administrator', and the license information 'Licensed to: Neocom Software Ltd'.

Click «Add» button to add a Dispatcher:

On the «**General**» page set general parameters for new Dispatcher:



On the «**General**» tab set general parameters for new Dispatcher:

Authentication:

- **Authentication** – select Authentication type in the dropdown list.
- Select **TRBOnet Authentication** to log on as User registered in TRBOnet Dispatch Software Users list.
- **User Name** – specify User Name registered in TRBOnet Dispatch Software Users list;
- **Password** – type in the individual password.

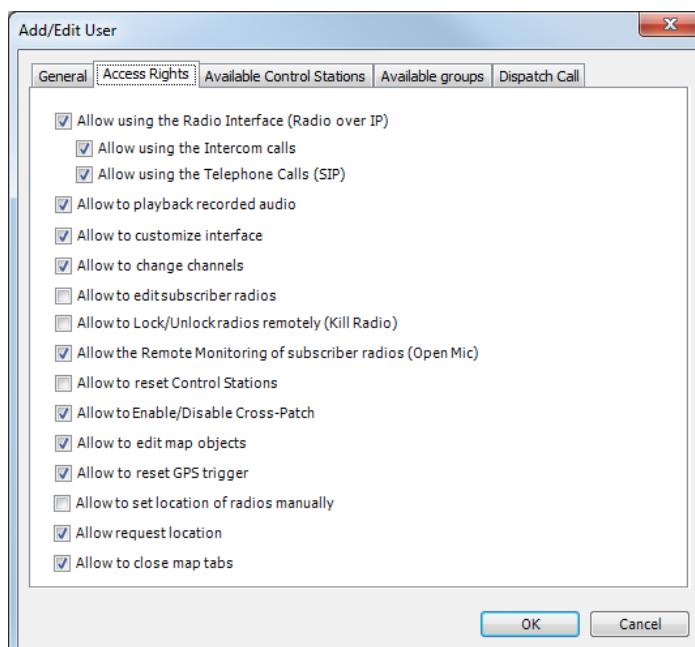
Select **Windows Authentication** to log on using the PC name. The system automatically shows the PC name as User Name.

Note: The password not required when Windows Authentication used.

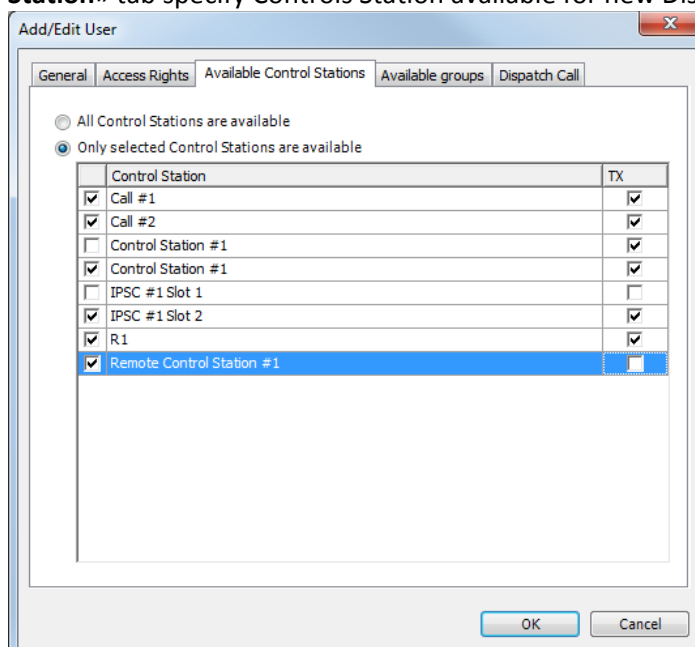
Note: for more details on user access to Allocation Console see [Users](#) section.

- **Display Name** – specify the name for new dispatcher to display in the Dispatch Console;
- **Description** – add the description for new dispatcher;
- **Available modes** – select available tabs of the Navigation Pane of the Dispatch Console for new Dispatcher;
- **Hide logon of this user from other users** – check to make new Dispatcher invisible for other users;
- **Allow this user to login in several consoles at the same time** – check to allow new dispatcher to use any number of Dispatch Consoles simultaneously.

On the «**Access Rights**» tab specify available options for new Dispatcher. Check options allowed to Dispatcher in the list of Access Rights:



On the «**Available Control Station**» tab specify Controls Station available for new Dispatcher:

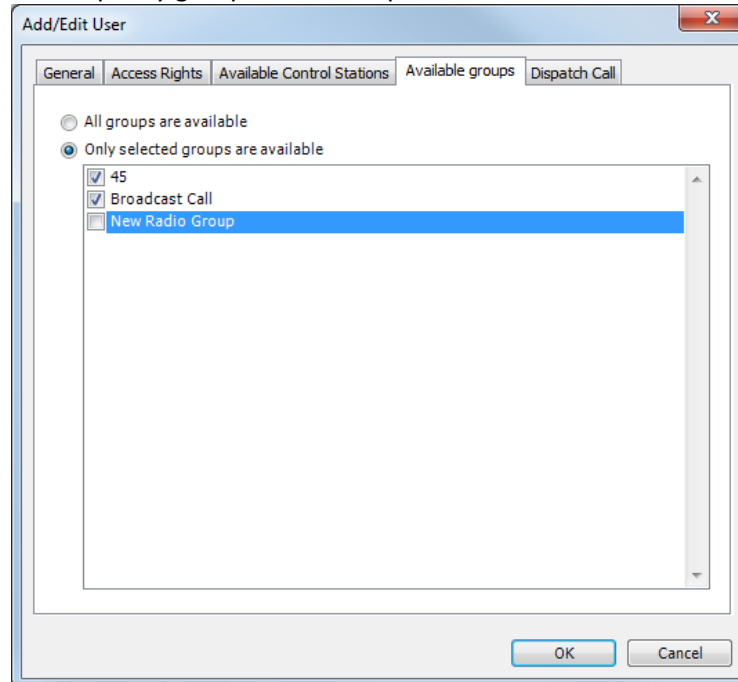


Control Station	TX
<input checked="" type="checkbox"/> Call #1	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Call #2	<input checked="" type="checkbox"/>
<input type="checkbox"/> Control Station #1	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Control Station #1	<input checked="" type="checkbox"/>
<input type="checkbox"/> IPSC #1 Slot 1	<input type="checkbox"/>
<input checked="" type="checkbox"/> IPSC #1 Slot 2	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> R1	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Remote Control Station #1	<input type="checkbox"/>

- Select **All Control Stations are available** to make all Control Stations in the system available for new Dispatcher to transmit and receive Voice and Data;
- Select **Only selected Control Stations are available** to specify Control Stations for new Dispatcher in the list.

Check selected Control Station box in the left column to add the Control Station in the Radio interface for new Dispatcher. When the Control Station is not selected in the left column, it is not available for the Dispatcher. Check selected Control Station box in the TX column to allow new Dispatcher make Voice Calls using the Control Station. When the Control Station is not selected in TX column, Dispatcher cannot use it to transmit voice and data.

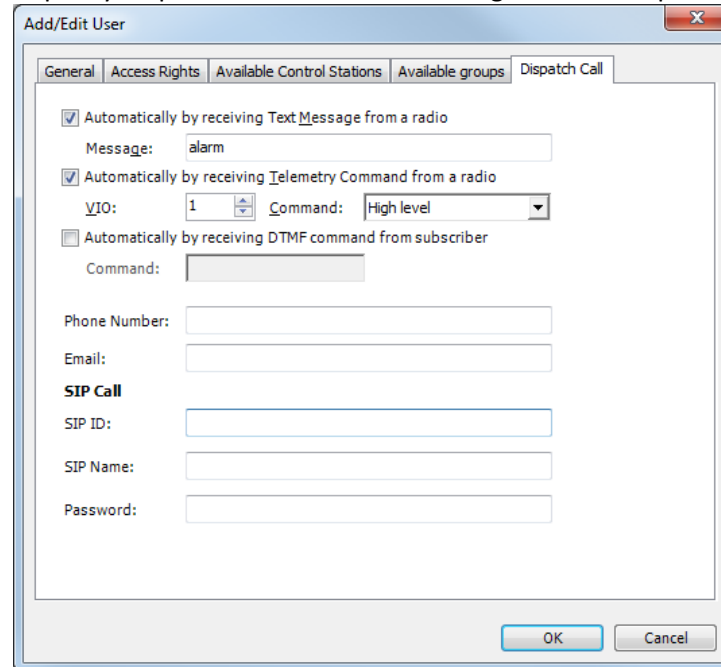
On the «**Available groups**» tab specify group for new Dispatcher to work with:



- Select **All groups are available** to make all created groups of the system available for new Dispatcher;
- Select **Only selected groups are available** to specify groups for new Dispatcher in the list.

Check selected groups in the list to make it available for new Dispatcher.

On the «**Dispatch Call**» tab specify Dispatch Call and SIP call settings for new Dispatcher:



- **Automatically by receiving Text Message from a radio** – select to start Dispatch Call when radio sends text message with predefined text;
 - ✓ **Message** – specify text message text
- **Automatically by receiving Telemetry Command from a radio** - select to start Dispatch Call when radio sends predefined telemetry;
 - ✓ **VIO** – select VIO to send telemetry;
 - ✓ **Command** – specify a command for selected VIO;
- **Automatically by receiving DTMF command from subscriber** – select to start Dispatch Call when radio sends DTMF command;
 - ✓ **Command** – specify DTMF command;
- **Phone number** - specify subscriber contact phone number (additional data);
- **Email** – specify subscriber contact email (additional data);

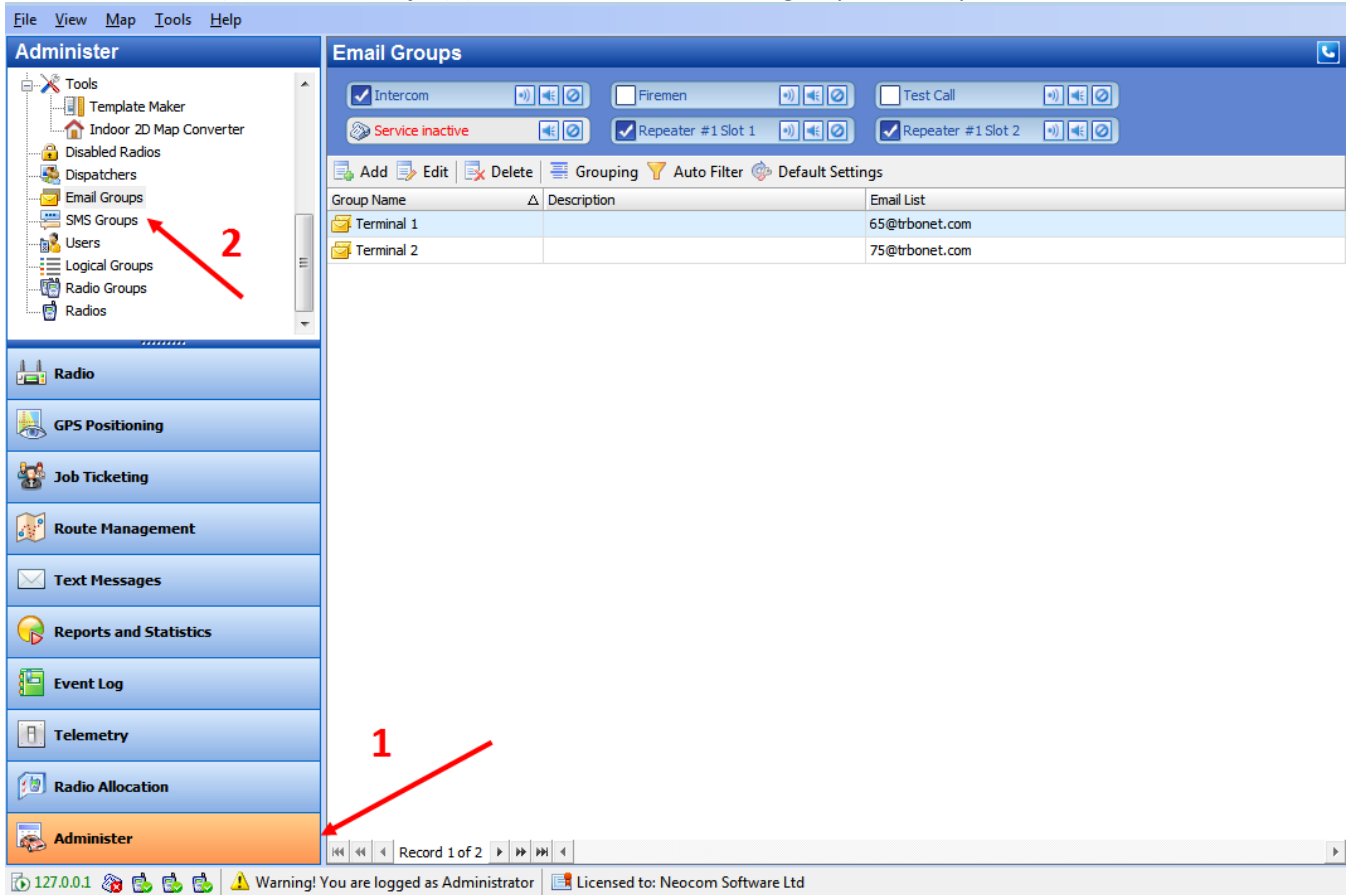
SIP Call

- **SIP ID** – type in your SIP ID afforded by provider to make incoming phone call;
- **SIP Name** – type in SIP Name afforded by provider when login;
- **Password** – the password for integration with Automatic Telephone Station.

Email Groups

Email Groups are used in Event/Alarm Management and Job Tickets configuration to send emails to dedicated recipients groups.

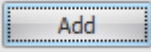
Go to **Administer (1)** , **Email Groups (2)** to add/edit/delete email groups in the system:

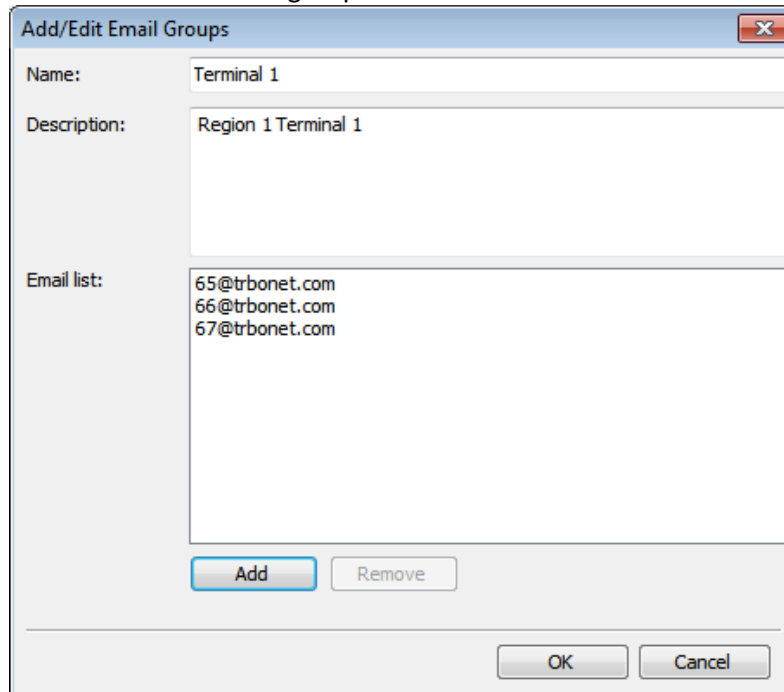


The screenshot shows the TRBOnet software interface. On the left is a sidebar with a tree view under 'Administer' containing: Tools, Template Maker, Indoor 2D Map Converter, Disabled Radios, Dispatchers, **Email Groups** (highlighted with a red arrow and '2'), SMS Groups, Users, Logical Groups, Radio Groups, and Radios. Below this is a list of main menu items: Radio, GPS Positioning, Job Ticketing, Route Management, Text Messages, Reports and Statistics, Event Log, Telemetry, Radio Allocation, and **Administer** (highlighted with a red arrow and '1'). The main window displays the 'Email Groups' configuration page. At the top, there are checkboxes for 'Intercom', 'Firemen', 'Test Call', 'Service inactive', 'Repeater #1 Slot 1', and 'Repeater #1 Slot 2'. Below this is a table with columns 'Group Name', 'Description', and 'Email List'.

Group Name	Description	Email List
Terminal 1		65@trbonet.com
Terminal 2		75@trbonet.com

At the bottom of the interface, there is a status bar showing '127.0.0.1', a warning message 'Warning! You are logged as Administrator', and a license notice 'Licensed to: Neocom Software Ltd'.

Click  button to create new email group:



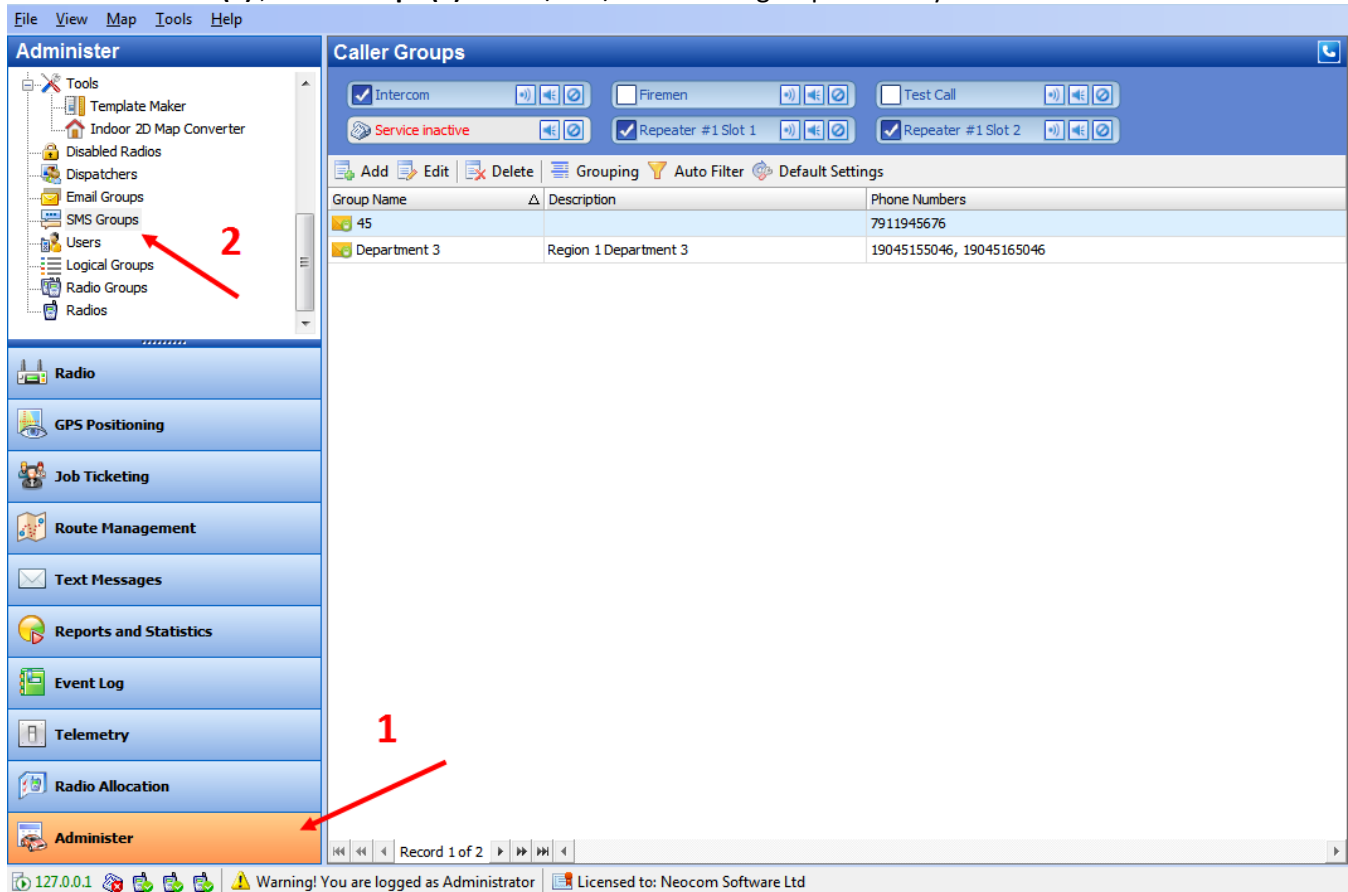
The dialog box is titled "Add/Edit Email Groups". It contains three main input areas: "Name:" with the text "Terminal 1", "Description:" with the text "Region 1 Terminal 1", and "Email list:" with a list of three email addresses: "65@trbonet.com", "66@trbonet.com", and "67@trbonet.com". Below the email list are "Add" and "Remove" buttons. At the bottom right are "OK" and "Cancel" buttons.

- **Name** – type in name for new email group;
- **Description** – add description for new email group;
- **Email list** – add emails to include in the email group.

SMS Groups

SMS Groups are used in Event/Alarm Management configuration to send sms to dedicated sms recipients groups.

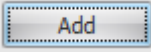
Go to **Administer (1)** , **SMS Groups (2)** to add/edit/delete SMS groups in the system:

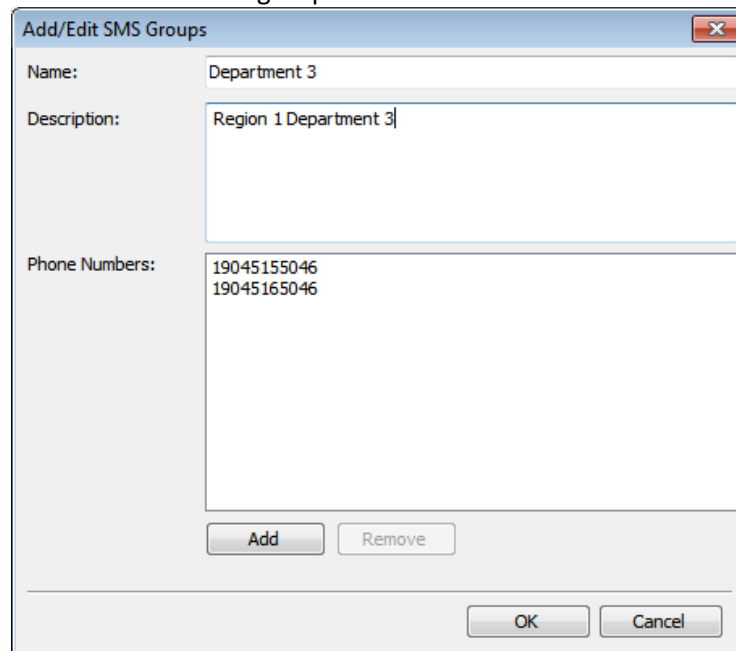


The screenshot shows the Neocom Software interface. On the left, the 'Administer' menu is highlighted with a red arrow and the number '1'. In the 'Administer' sub-menu, 'SMS Groups' is highlighted with a red arrow and the number '2'. The main window displays the 'Caller Groups' section, which includes a table of groups.

Group Name	Description	Phone Numbers
45		7911945676
Department 3	Region 1 Department 3	19045155046, 19045165046

The interface also shows various status indicators at the bottom, including a warning: 'Warning! You are logged as Administrator' and a license notice: 'Licensed to: Neocom Software Ltd'.

Click  button to create new SMS group:

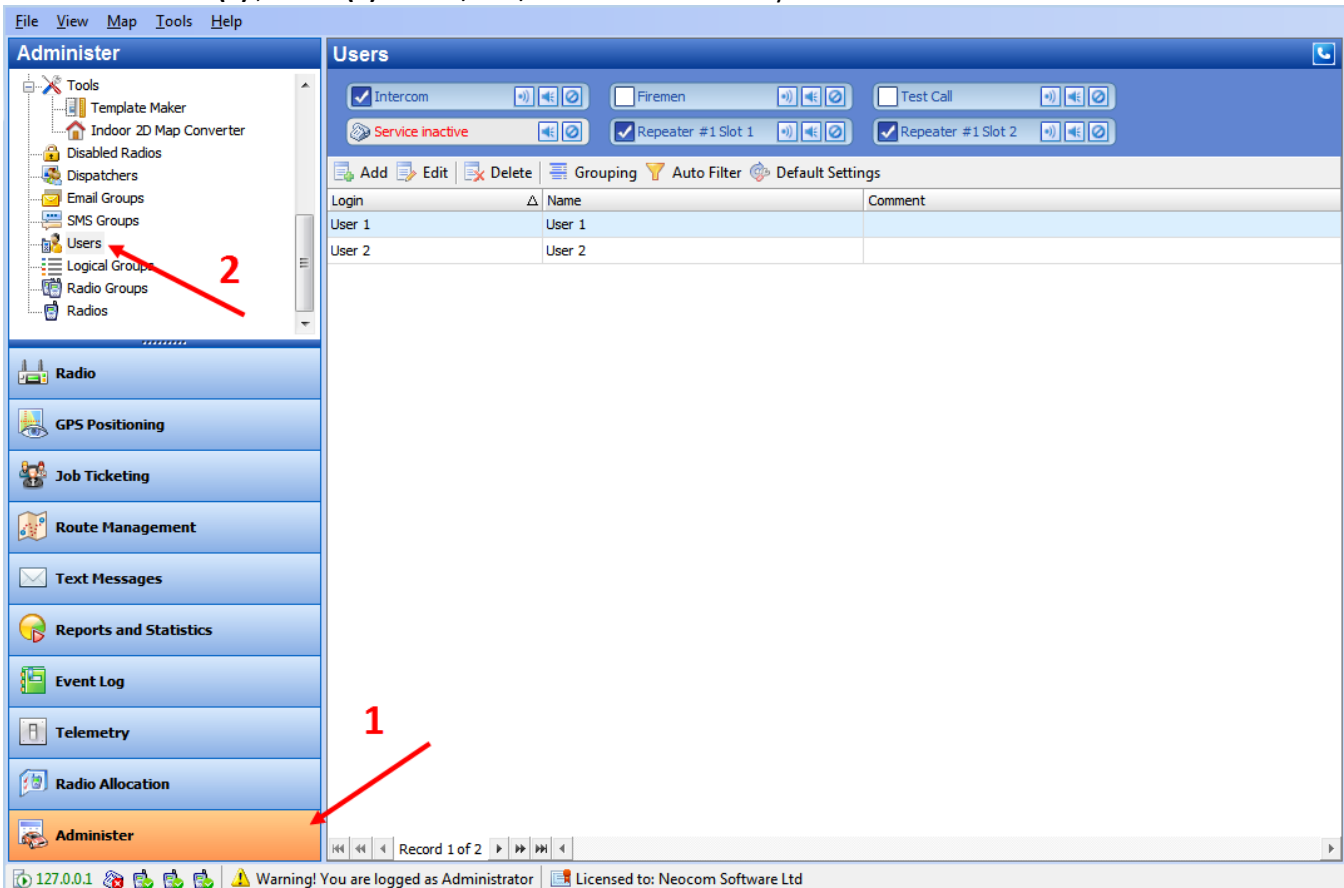


The dialog box is titled "Add/Edit SMS Groups". It contains three main sections: "Name:" with a text field containing "Department 3"; "Description:" with a text area containing "Region 1 Department 3"; and "Phone Numbers:" with a list box containing "19045155046" and "19045165046". Below the list box are "Add" and "Remove" buttons. At the bottom right are "OK" and "Cancel" buttons.

- **Name** – type in name for SMS group;
- **Description** – add description for new SMS group;
- **Phone Numbers** – add phone numbers to include in the SMS group.

Users

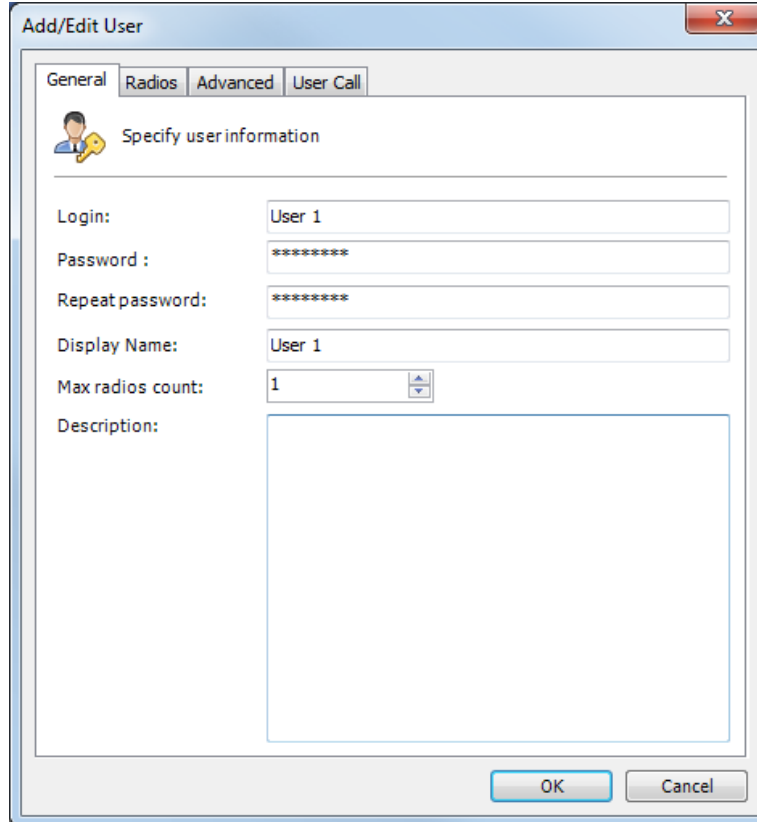
Go to **Administer (1)** , **Users (2)** to add/edit/delete Users in the system:



The screenshot shows the TRBOnet software interface. On the left is a sidebar with a tree view under 'Administer' containing: Tools, Template Maker, Indoor 2D Map Converter, Disabled Radios, Dispatchers, Email Groups, SMS Groups, Users (highlighted with a red arrow labeled '2'), Logical Groups, Radio Groups, and Radios. Below this are buttons for Radio, GPS Positioning, Job Ticketing, Route Management, Text Messages, Reports and Statistics, Event Log, Telemetry, Radio Allocation, and Administer (highlighted with a red arrow labeled '1'). The main window is titled 'Users' and contains a toolbar with 'Add', 'Edit', 'Delete', 'Grouping', 'Auto Filter', and 'Default Settings'. Below the toolbar is a table with columns 'Login', 'Name', and 'Comment'. The table contains two rows: 'User 1' and 'User 2'. At the bottom of the window, there is a status bar showing 'Record 1 of 2' and a warning message: 'Warning! You are logged as Administrator'. The bottom left corner shows the version '127.0.0.1' and the license 'Licensed to: Neocom Software Ltd'.

Click «Add» button to add new User in the system:

On the «**General**» page set general parameters for new User:



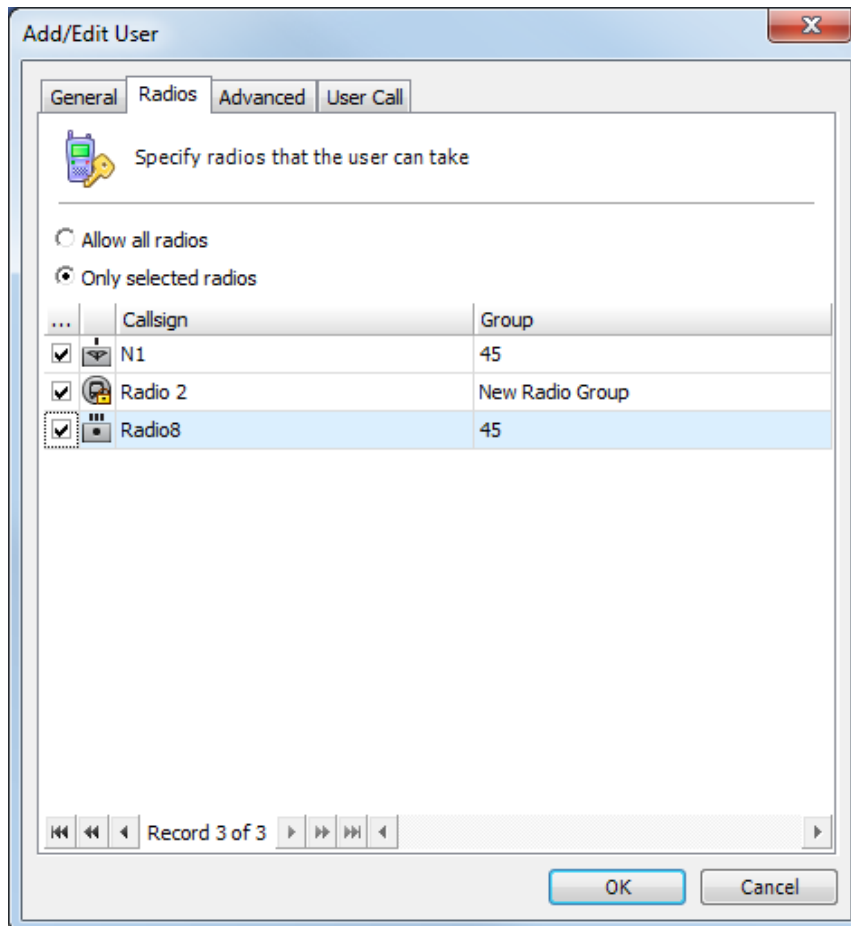
The dialog box is titled "Add/Edit User" and has a close button (X) in the top right corner. It contains four tabs: "General", "Radios", "Advanced", and "User Call". The "General" tab is selected. Below the tabs is a section titled "Specify user information" with a user icon. The form fields are as follows:

- Login:** Text box containing "User 1".
- Password:** Password box containing "*****".
- Repeat password:** Password box containing "*****".
- Display Name:** Text box containing "User 1".
- Max radios count:** Spin box set to "1".
- Description:** Large empty text area.

At the bottom right are "OK" and "Cancel" buttons.


- **Login** – specify the login to logon in Dispatch Console;
- **Password** – type in the individual password.
- **Display Name** – specify a name for new user to display in the Dispatch Console;
- **Max radios count** – select a number of radios available to use for new user
- **Description** – add the description for new dispatcher;

On «**Radios**» tab set radios available for new user:



Add/Edit User

General Radios Advanced User Call

 Specify radios that the user can take

☐ Allow all radios
☒ Only selected radios

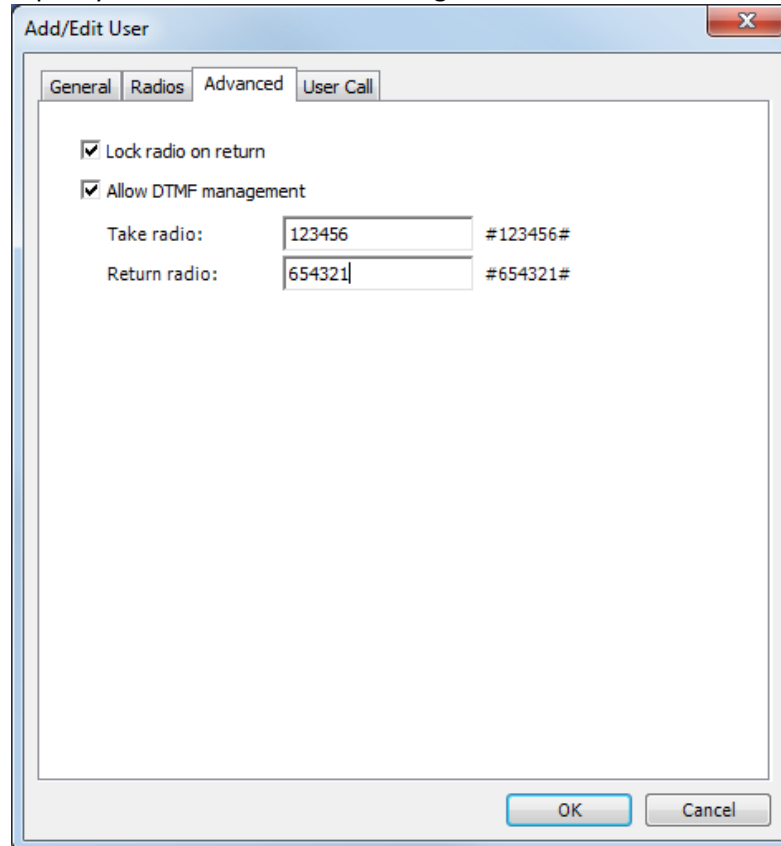
...	Callsign	Group
<input checked="" type="checkbox"/>	N1	45
<input checked="" type="checkbox"/>	Radio 2	New Radio Group
<input checked="" type="checkbox"/>	Radio8	45

Record 3 of 3

OK Cancel

- **Allow all radios** – select to allow to use all radios in the system;
- **Only selected radios** – check to select available radios in the list for new user.

On the «**Advanced**» tab specify lock radio and DTMF settings:



Add/Edit User

General Radios **Advanced** User Call

☒ Lock radio on return

☒ Allow DTMF management

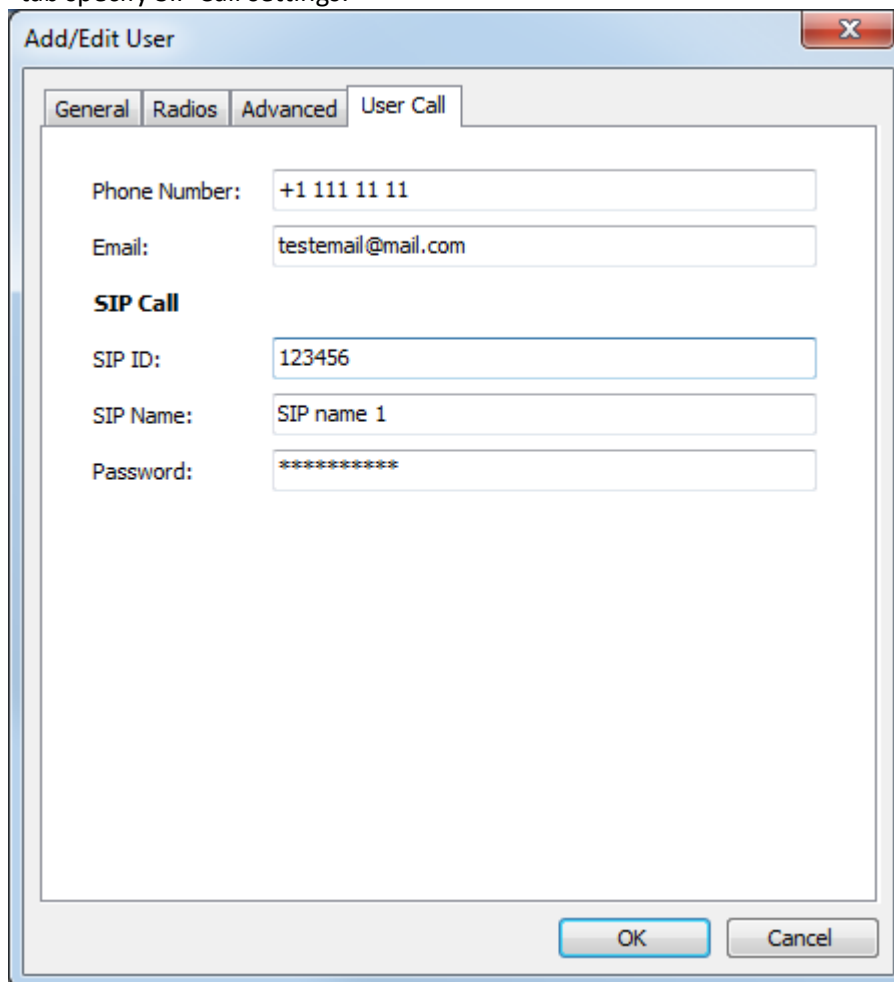
Take radio: 123456 #123456#

Return radio: 654321 #654321#

OK Cancel

- **Lock radio on return** – select to disable returned radio after typing «**Return radio**» message;
- **Allow DTMF management** – select to set logon data for new user:
 - **Take radio** – specify a DTMF commands for new User to type in on the radio keyboard when the User takes a radio;
 - **Return radio** – specify a DTMF commands for new User to type in on the radio keyboard when the User returns a radio;

On the «User Call» tab specify SIP Call settings:



- **Phone number** – specify additional contact information for user;
- **Email** – specify an email of radio subscriber.

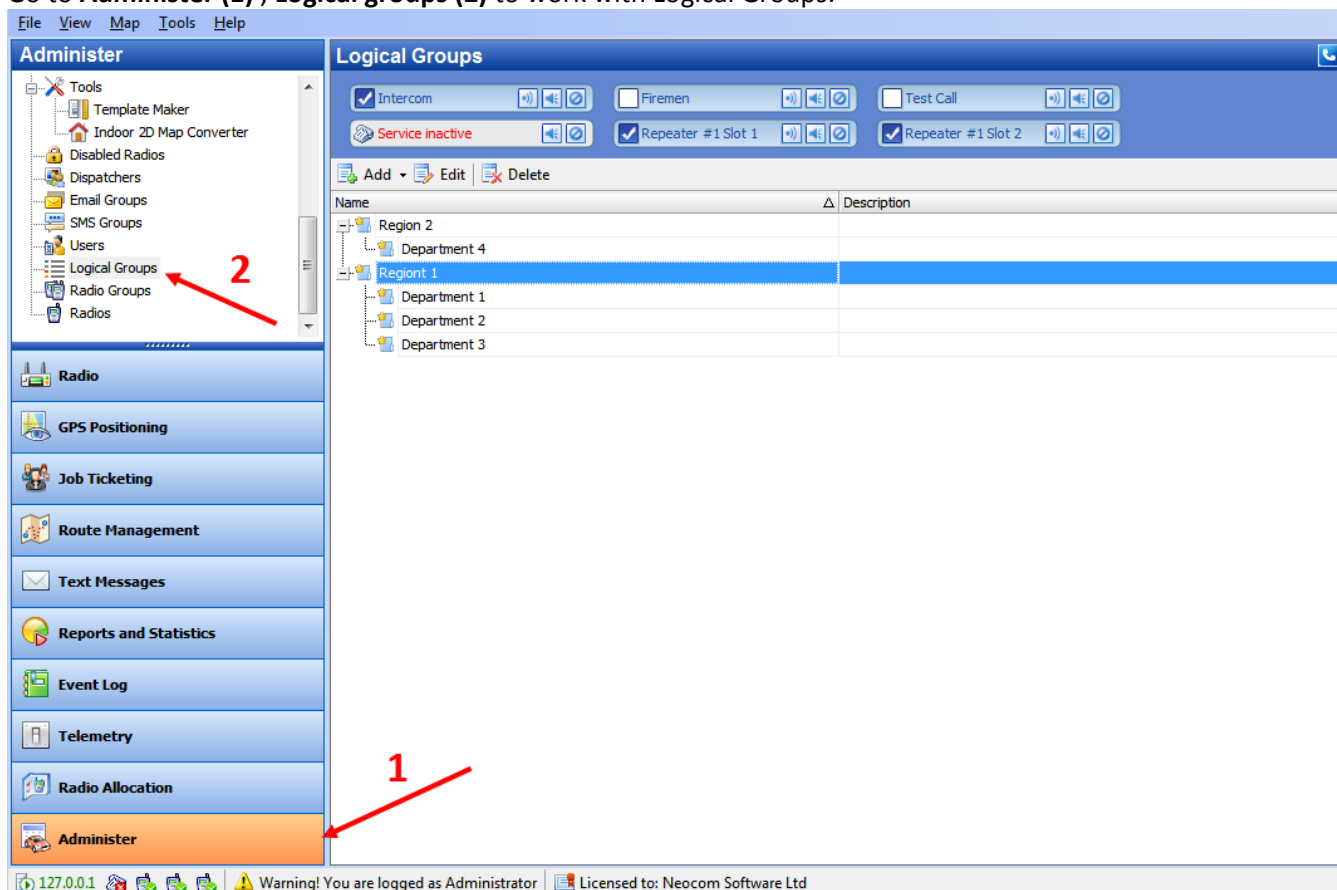
SIP Call - the information is afforded by the provider:

- **SIP ID** – type in your SIP ID afforded by provider to make incoming phone call;
- **SIP Name** – type in SIP Name afforded by provider when logon;
- **Password** – the password for integration with Automatic Telephone Station.

Logical Groups

TRBOnet Dispatch Software allows adding custom logical groups in addition to radio groups. You can add groups and subgroups and assign subscriber to these groups.

Go to **Administer (1)**, **Logical groups (2)** to work with Logical Groups:



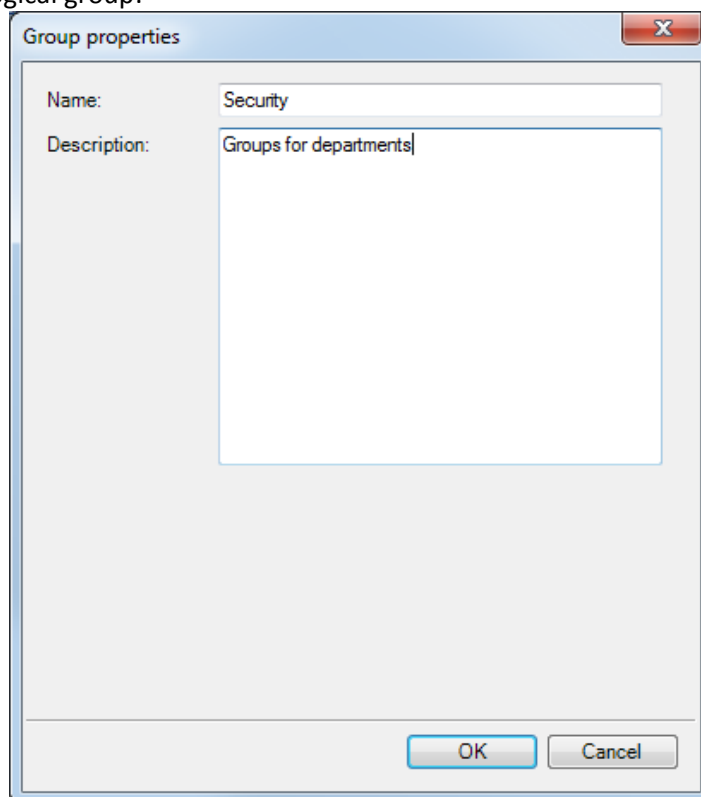
The screenshot shows the TRBOnet Dispatch Software interface. On the left, the 'Administer' menu is expanded, showing options like Tools, Template Maker, Indoor 2D Map Converter, Disabled Radios, Dispatchers, Email Groups, SMS Groups, Users, Logical Groups (highlighted with a red arrow labeled '2'), Radio Groups, and Radios. Below this, a vertical toolbar contains icons for Radio, GPS Positioning, Job Ticketing, Route Management, Text Messages, Reports and Statistics, Event Log, Telemetry, Radio Allocation, and Administer (highlighted with a red arrow labeled '1'). The main window, titled 'Logical Groups', displays a tree view of logical groups. The tree shows 'Region 2' as a root folder, containing 'Department 4'. 'Region 1' is also a root folder, containing 'Department 1', 'Department 2', and 'Department 3'. The 'Add' button is visible at the top of the tree view.

Click «Add» button to add a Logical Group.

Select «Add as a Root» to add a new logical group as a root folder.

Select «Add» to add a new logical subgroup in the selected root folder.

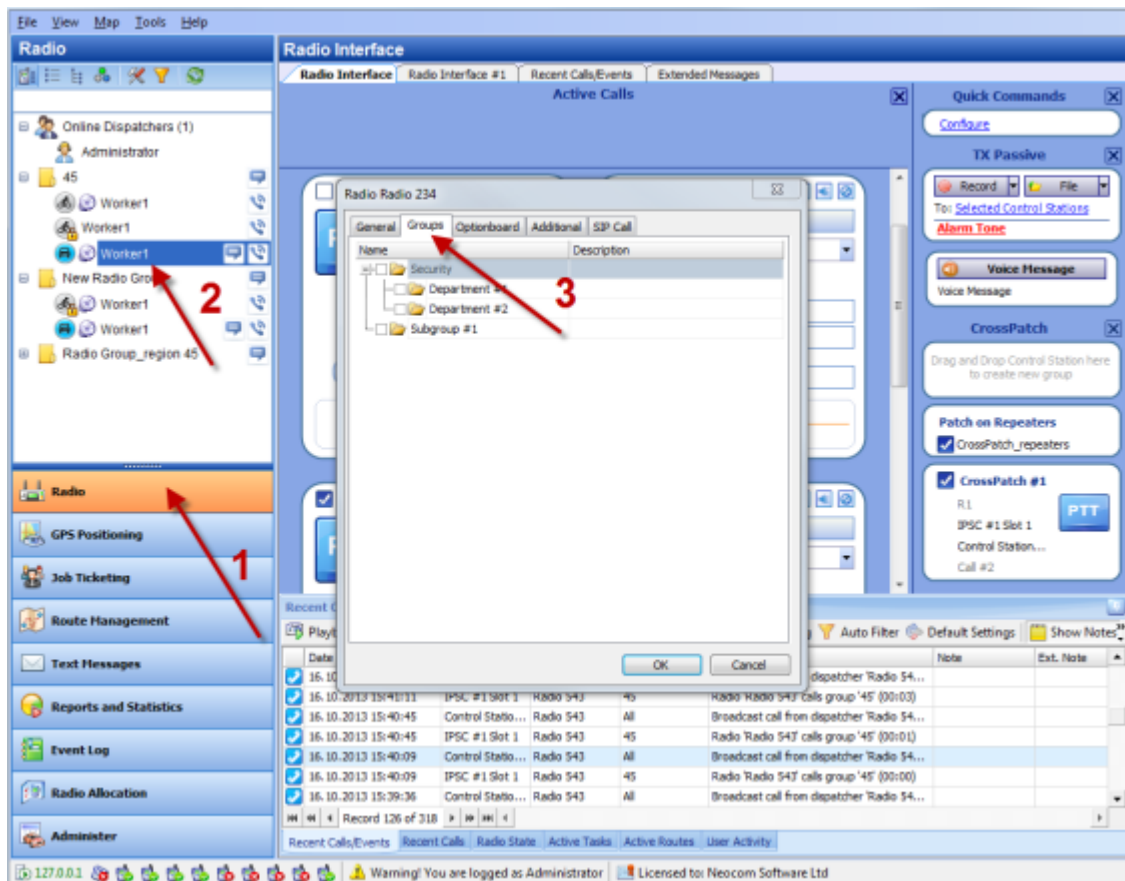
Specify settings for new logical group:



A screenshot of a 'Group properties' dialog box. The dialog has a title bar with a close button (X). It contains two labels: 'Name:' and 'Description:'. The 'Name' field is a text box containing the word 'Security'. The 'Description' field is a larger text area containing the text 'Groups for departments'. At the bottom right of the dialog are two buttons: 'OK' and 'Cancel'.

Specify the **Name** and **Description** for new group.
Click «**OK**» to add new logical group.

To add a Radio in logical group go to «**Radio**» page (1) and double-click selected radio (2) to open radio properties:



Go to «**Groups**» tab (3) and select a logical group for the radio.

To display logical groups enable Logical Group view:



All created logical groups are displayed in the list of radios.

Radio Groups

Go to **Administer (1)** , **Radio Group (2)** to add/edit/delete Radio Group in the system:

File View Map Tools Help

Administer

- Tools
 - Template Maker
 - Indoor 2D Map Converter
- Disabled Radios
- Dispatchers
- Email Groups
- SMS Groups
- Users
- Logical Groups
- Radio Groups**
- Radios

Radio
GPS Positioning
Job Ticketing
Route Management
Text Messages
Reports and Statistics
Event Log
Telemetry
Radio Allocation
Administer

Radio Groups

☒ Intercom
 ☐ Firemen
 ☐ Test Call

☒ Service inactive
 ☒ Repeater #1 Slot 1
 ☒ Repeater #1 Slot 2

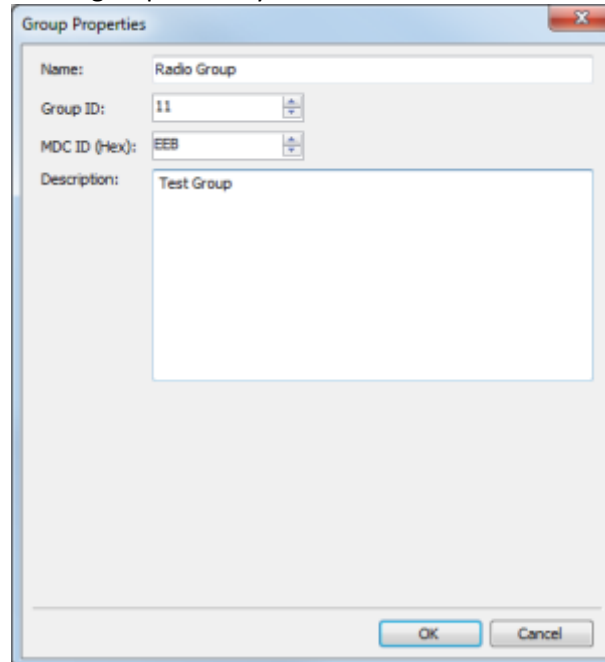
[Add](#)
[Edit](#)
[Delete](#)
[Grouping](#)
[Auto Filter](#)
[Default Settings](#)

Name	Radio ID	MDC (Hex)
Department 1	2	0
Department 1	1	0
Department 2	4	0

Record 1 of 3

127.0.0.1 Warning! You are logged as Administrator Licensed to: Neocom Software Ltd

Click «Add» button to add new radio group in the system:



The dialog box is titled "Group Properties" and contains the following fields:

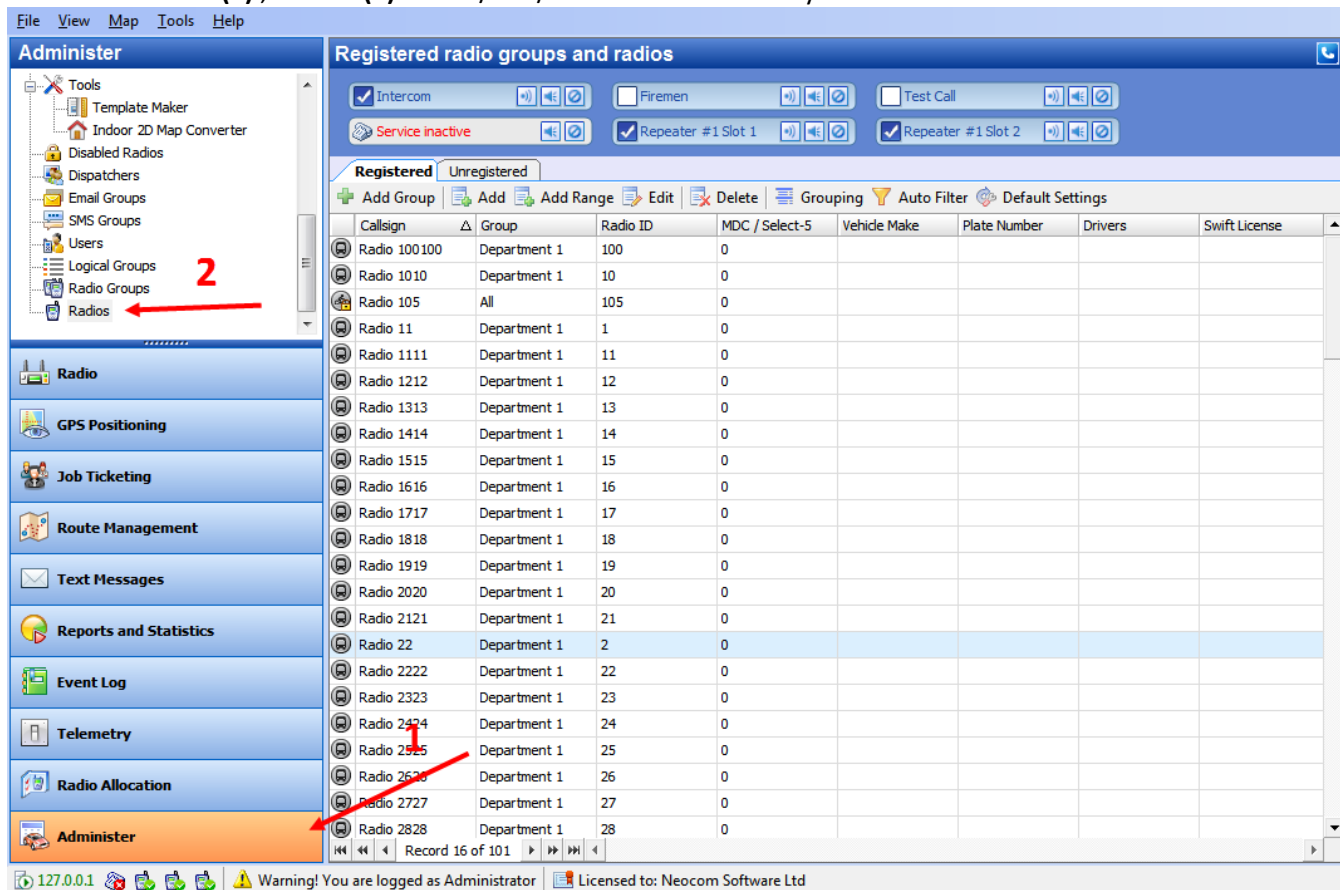
- Name:** Radio Group
- Group ID:** 11
- MDC ID (Hex):** EEB
- Description:** Test Group

At the bottom right, there are "OK" and "Cancel" buttons.

- **Name** – specify a name for new radio group in the system;
- **Group ID** - ID used to identify messages transmitted to a group of radios;
- **MDC ID (Hex)** - set an ID for MDC 1200 analog call member. This ID is used to identify and communicate with a target radio or group of radios depending on the call type. For more details on MDC 1200 see <http://en.wikipedia.org/wiki/MDC-1200>;
- **Description** – add a description for a radio group.

Radios

Go to **Administer (1)** , **Radios (2)** to add/edit/delete Radios in the system:

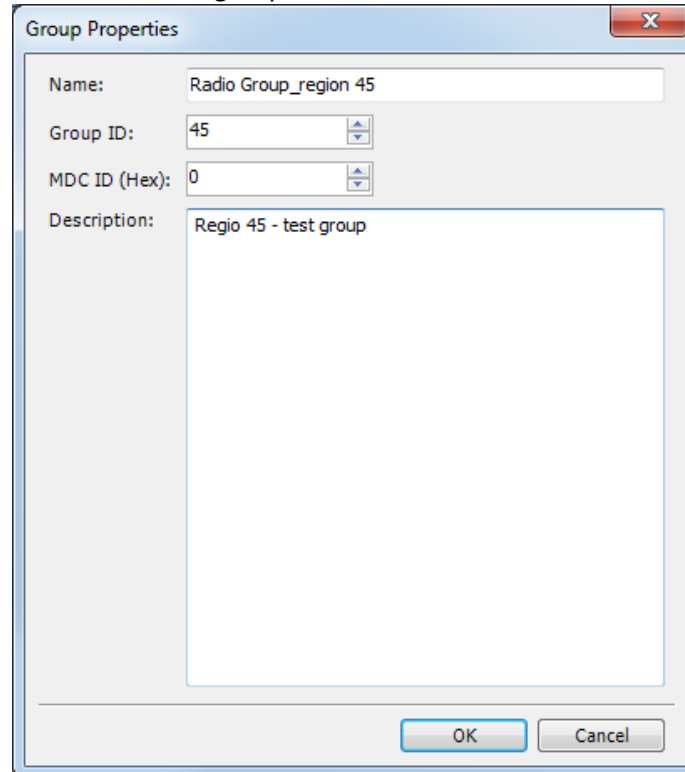


The screenshot shows the TRBOnet software interface. On the left, the 'Administer' menu is highlighted with a red arrow and the number '2'. The 'Registered radio groups and radios' table is displayed with columns: Callsign, Group, Radio ID, MDC / Select-5, Vehicle Make, Plate Number, Drivers, and Swift License. The table lists various radio groups and their associated radio IDs. A red arrow and the number '1' point to the 'Radio 2828' entry in the table.

Callsign	Group	Radio ID	MDC / Select-5	Vehicle Make	Plate Number	Drivers	Swift License
Radio 100100	Department 1	100	0				
Radio 1010	Department 1	10	0				
Radio 105	All	105	0				
Radio 11	Department 1	1	0				
Radio 1111	Department 1	11	0				
Radio 1212	Department 1	12	0				
Radio 1313	Department 1	13	0				
Radio 1414	Department 1	14	0				
Radio 1515	Department 1	15	0				
Radio 1616	Department 1	16	0				
Radio 1717	Department 1	17	0				
Radio 1818	Department 1	18	0				
Radio 1919	Department 1	19	0				
Radio 2020	Department 1	20	0				
Radio 2121	Department 1	21	0				
Radio 22	Department 1	2	0				
Radio 2222	Department 1	22	0				
Radio 2323	Department 1	23	0				
Radio 2424	Department 1	24	0				
Radio 2525	Department 1	25	0				
Radio 2626	Department 1	26	0				
Radio 2727	Department 1	27	0				
Radio 2828	Department 1	28	0				

Administrator can add new radio group or add new radio.

Click «**Add Group**» button to add new radio group:



The image shows a 'Group Properties' dialog box with the following fields:

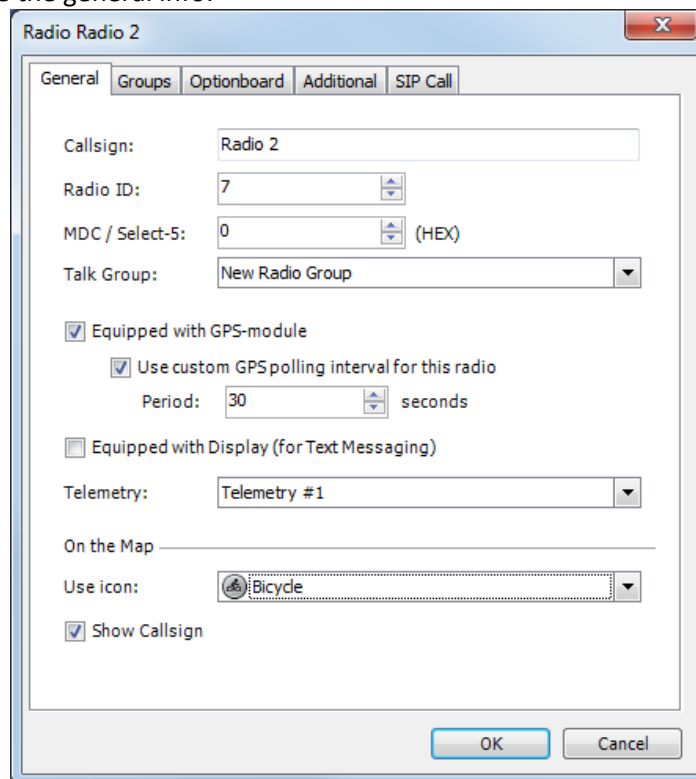
- Name:** Radio Group_region 45
- Group ID:** 45
- MDC ID (Hex):** 0
- Description:** Regio 45 - test group

At the bottom of the dialog are 'OK' and 'Cancel' buttons.

- **Name** – specify a name for new radio group to display in the Dispatch Console;
- **Group ID** - ID used to identify messages transmitted to a group of radios. Specify an ID for new radio group;
- **MDC ID (Hex)** – set an ID for MDC 1200 analog call member. This ID is used to identify and communicate with a target radio or group of radios depending on the call type. For more details on MDC 1200 see <http://en.wikipedia.org/wiki/MDC-1200>;
- **Description** – add the description for new dispatcher;

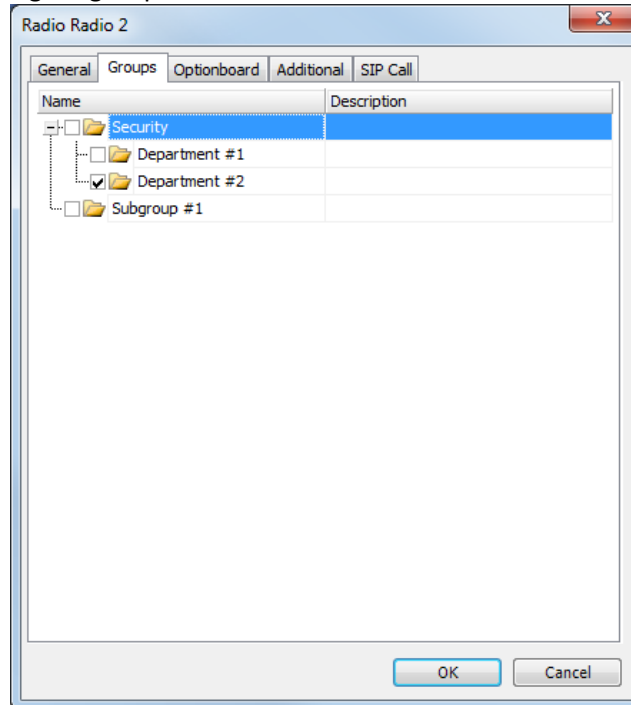
Click «**Add**» button to add new radio.

On the **Description** tab see the general info:



- **Callsign** – specify a callsign for new radio to display in the Dispatch Console;
- **Radio ID** – specify a Radio ID. Sets an individual ID that uniquely identifies the Radio. This ID is used by other calling radios when addressing the radio, for instance, when making a private call or sending a text message;
- **MDC/Select-5** – for more details see «Signaling systems» on [Add](#) page;
- **Radio Group** – select the Radio group for new radio in the dropdown list;
- **Equipped with GPS-module** – select to enable GPS positioning option for radio;
 - **Channel Type** – data transfer channel type from Radio codeplug:
 - Scheduled channel is the channel with Enhanced GPS,
 - Channel with CSBK allows using CSBK (Control Signaling Block) while decoding.
 - **Start Periodic Trigger** – select to make the radio to send periodic GPS updates. Update time interval is configured in RadioServer configuration or can be customized below.;
 - **Manual Control of GPS Trigger** – select to allow Dispatcher to set trigger manually. In this case, the system will set the default trigger and will not monitor the trigger;
 - **Start Emergency Trigger** – select to receive GPS data in case of alarm;
 - **Use custom GPS polling interval for this radio** – select to set a period for new radio to send GPS data
 - **Period** – specify a period to send GPS data;
- **Equipped with Display (for Text Messaging)** – select if new radio supports Text Messaging service (equipped with Display);

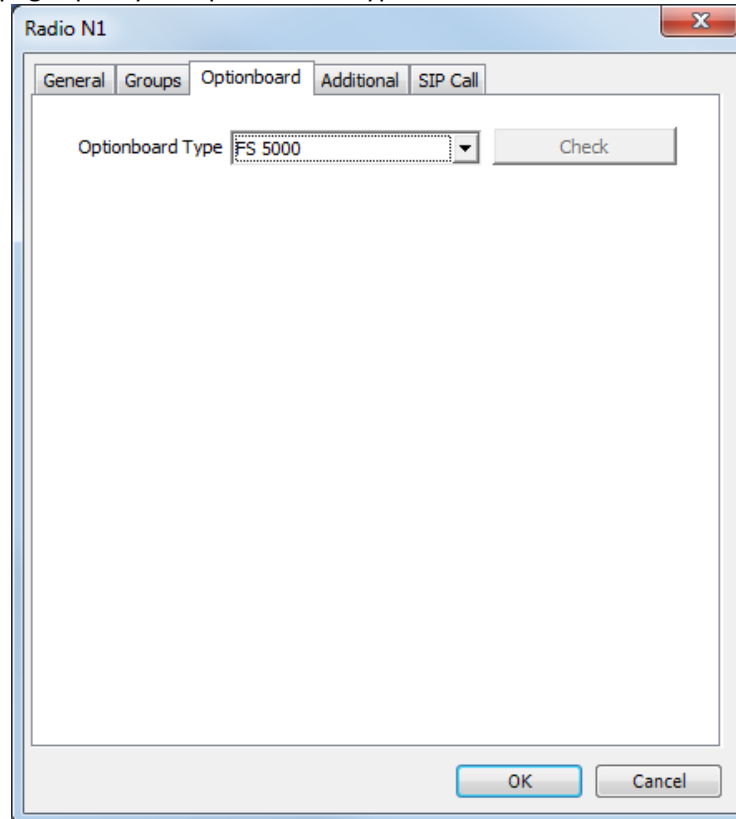
On the «**Groups**» tab specify logical groups for a radio:



Select a logical group in the list of available groups.

For more information about logical groups see [Logical Groups](#) section.

On the «**Option Board**» page specify an Option board type:



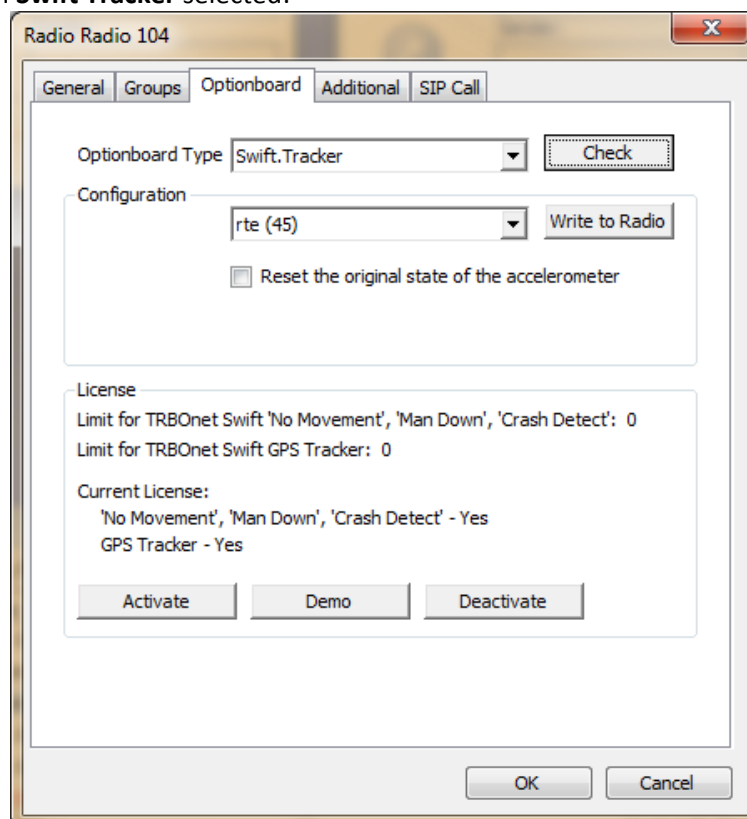
The image shows a software window titled "Radio N1" with a tabbed interface. The "Optionboard" tab is selected. Inside the tab, there is a label "Optionboard Type" followed by a dropdown menu currently displaying "FS 5000". To the right of the dropdown is a "Check" button. At the bottom of the window are "OK" and "Cancel" buttons.

Option Board Type – select the Option Board type in the dropdown list.

Note: available when editing a radio only!

- **FS 5000** - option board for **FS 5000 location service** - GPS data package transmitting service.
- **Indoor** – an Option Board for **Indoor Service (K-TERM)** - service for indoor positioning where satellite navigation is not available.
- **Tallysman Sprite TW 20x/15x** – an Option Board for **Tallysman Sprite service** - service for autonomous event and aggregated event reporting to provide significant reduction in GPS data overhead.

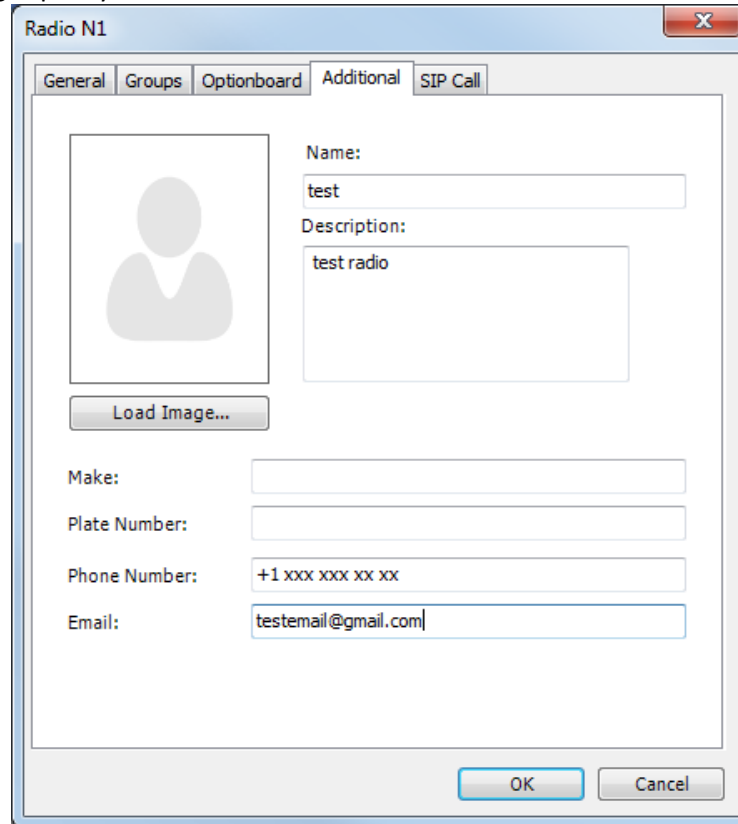
Optionboard page when **Swift Tracker** selected:



Click «**Check**» button to test the connection to Swift Tracker device.

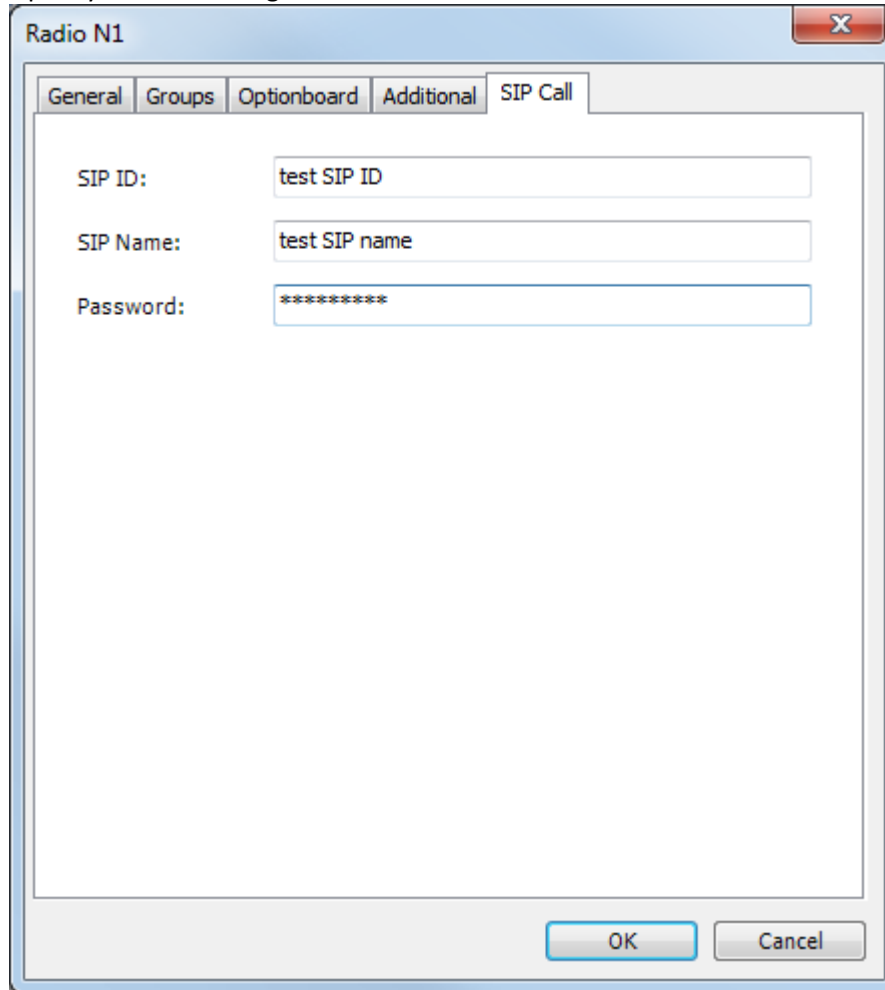
- **Configuration** – specify the configuration in the dropdown list. Click «**Write to radio**» to write the selected configuration to new radio. For more information about Swift Tracker configuration see [Tools](#) section.
- **Reset the original state of accelerometer** – when a radio reloads after setting accelerometer parameters, radio's current position will be set as initial position for No Movement, Man Down and Crash Detect options;
- **License** – in the «**License**» field see the License information and select the following options:
 - Activate a current license – click «**Activate**» button to activate GPS Tracker and Swift No Movement, Man Down, Crash Detect features License files;
 - Activate a demo-license – click «**Demo**» button to activate GPS Tracker and Swift No Movement, Man Down, Crash Detect features License files for **time period during an hour**;
 - Deactivate license – click «**Deactivate**» button to deactivate GPS Tracker and Swift No Movement, Man Down, Crash Detect features License files.

On the «**Additional**» page specify further information about radio subscriber:



- **Name** – specify a name for radio subscriber;
- **Description** – add a description for radio subscriber;
- Click «**Load Image**» button to assign a photo or image for radio subscriber.
- **Make** – specify an additional information;
- **Plate number** – specify an additional information;
- **Phone number** – add a contact telephone number for radio subscriber;
- **Email** – add an email address for radio subscriber.

On «SIP Call» page specify SIP Call settings for radio:



The image shows a dialog box titled "Radio N1" with a close button (X) in the top right corner. It contains five tabs: "General", "Groups", "Optionboard", "Additional", and "SIP Call". The "SIP Call" tab is currently selected. Inside this tab, there are three input fields: "SIP ID:" with the value "test SIP ID", "SIP Name:" with the value "test SIP name", and "Password:" with the value "*****". At the bottom right of the dialog box are "OK" and "Cancel" buttons.

The information is afforded by the provider:

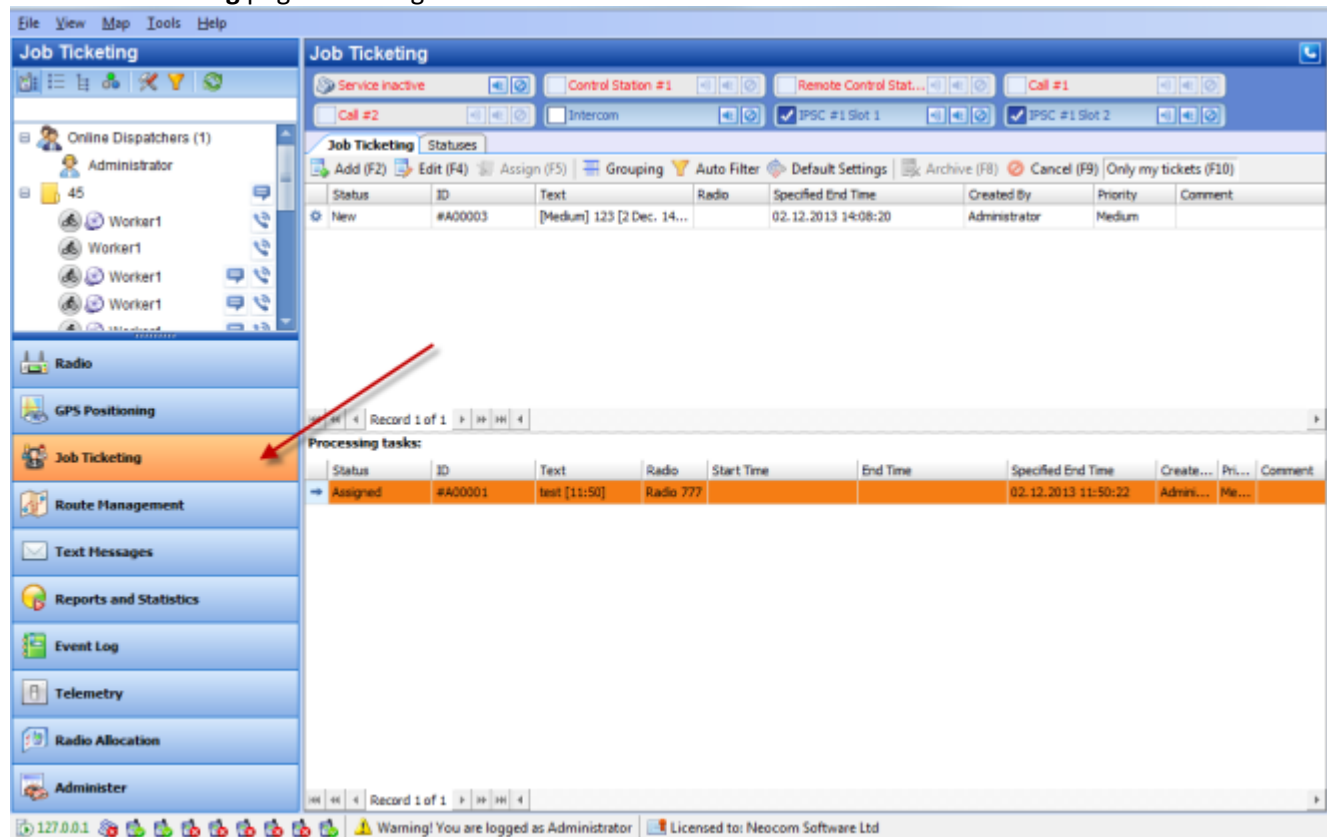
- **SIP ID** – type in your SIP ID afforded by provider to make incoming phone call;
- **SIP Name** – type in SIP Name afforded by provider when logon;
- **Password** – the password for integration with PBX server.

Configuring Job Ticketing

TRBOnet Dispatch Software provides **Job Ticketing** feature – the integrated ticketing system which allows Dispatchers to create, assign and track job tickets through the radio network.

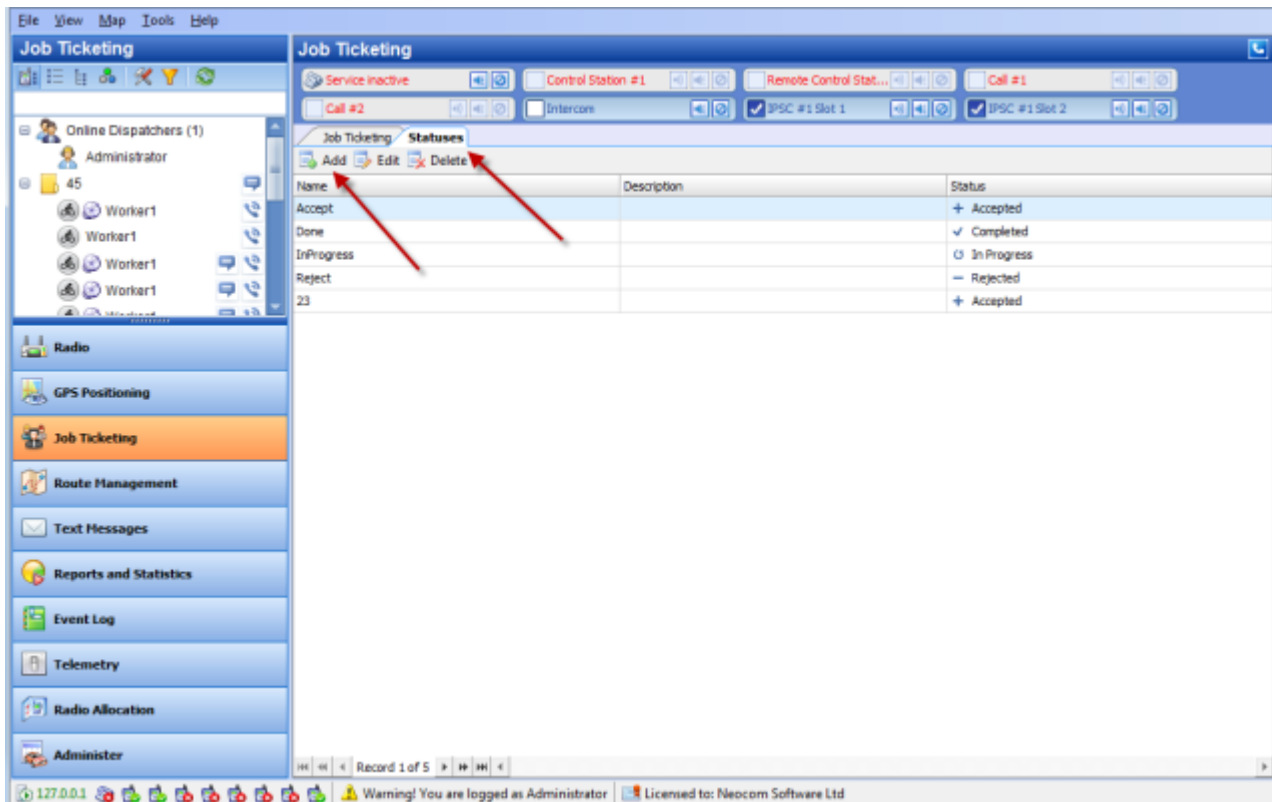
Note: before using the feature make sure that your TRBOnet Dispatch Software license includes Job Ticketing.

Go to **Job Ticketing** page to manage Job Tickets:

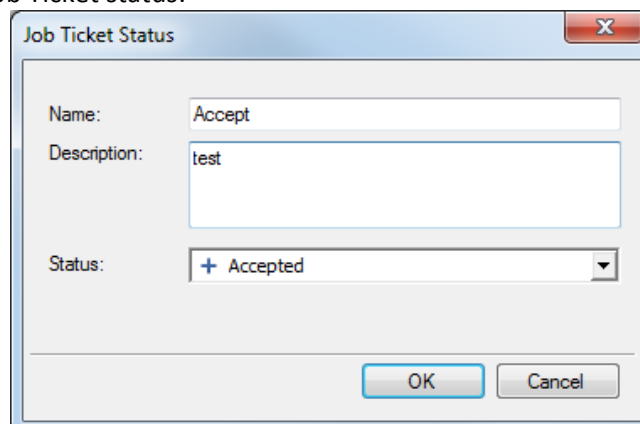


The screenshot shows the TRBOnet Dispatch Software interface. On the left, a sidebar contains various menu items: 'Job Ticketing' (highlighted with a red arrow), 'Route Management', 'Text Messages', 'Reports and Statistics', 'Event Log', 'Telemetry', 'Radio Allocation', and 'Administer'. The main window is titled 'Job Ticketing' and contains a status bar with options like 'Service inactive', 'Control Station #1', 'Remote Control Stat...', 'Call #1', 'Call #2', 'Intercom', 'IPSC #1 Slot 1', and 'IPSC #1 Slot 2'. Below the status bar is a 'Job Ticketing' section with a 'Statuses' tab. It includes a table with columns: Status, ID, Text, Radio, Specified End Time, Created By, Priority, and Comment. The table shows one 'New' ticket with ID #A00003. Below this is a 'Processing tasks' section with a table showing one 'Assigned' task with ID #A00001, text 'test [11:50]', and radio 'Radio 777'. The bottom status bar shows 'Warning! You are logged as Administrator' and 'Licensed to: Neocom Software Ltd'.

Go to **Statuses** tab to add a Job Ticket Status:



Click «Add» button to add Job Ticket status:



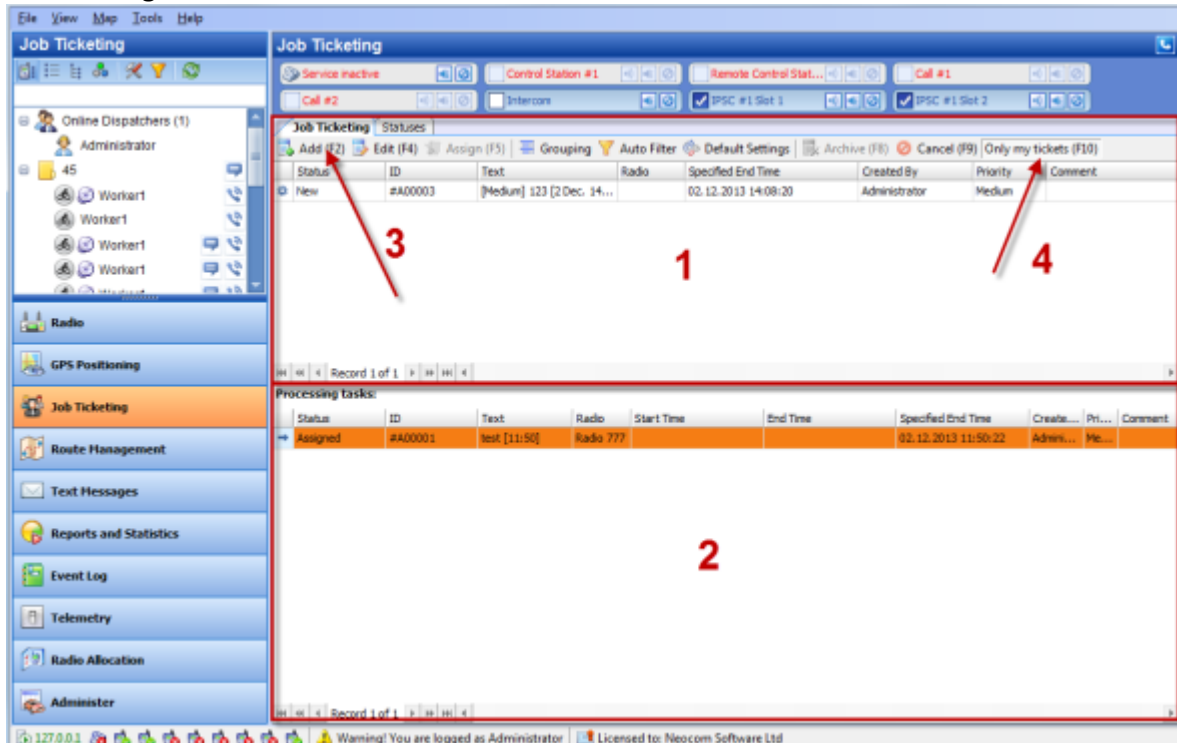
- **Name** – specify a Job Ticket name to display in the system;
- **Description** – specify a description for Job Ticket;
- **Status** – select Job Ticket status in the dropdown list.

Note: specify a Job Ticket name according to the following compliance table (to make Job Tickets identified by radio):

Status	Name
Accepted	Accept
Completed	Done
In Progress	InProgress
Rejected	Reject

Click «OK» to add a status.

Go to **Job Ticketing** tab to add a Job Ticket:



1 – New tasks list;

2 – Processing tasks list;

Click «Add» button (3) to create new task:

Job Ticket

Ticket ID: #A00000

Templates:

Text: 123

Deadline: 15 minutes

End Time: 7/4/2014 4:06 AM

☒ Notify on status changes

☒ Notify if ticket is not accepted by

7/4/2014 4:01 AM

[Notification List](#)


Priority: High

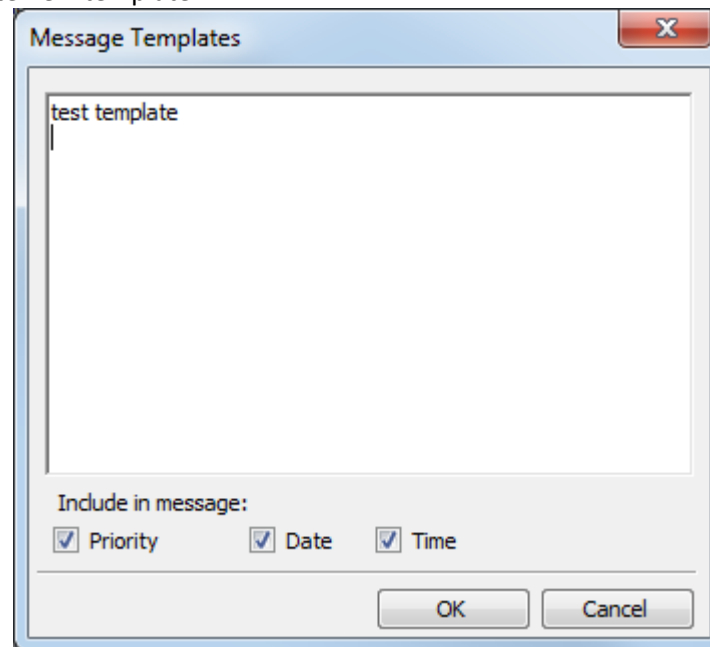
Comment: Firemen

[Preview](#)

[Hide Advanced Options](#) OK Cancel

- **Ticket ID** – specify new Job Ticket ID to display in Dispatch Console;
- **Templates** – select templates in the dropdown list to create new Job Ticket according to selected template.

Click  button to create new template:



The dialog box titled "Message Templates" contains a text area with the text "test template". Below the text area, under the heading "Include in message:", there are three checked checkboxes: "Priority", "Date", and "Time". At the bottom right are "OK" and "Cancel" buttons.

Type in template text in the field.

Specify parameters to include in the template:

- **Priority** – select to display task priority in the tasks list;
- **Date** – select to display task end date in the tasks list;
- **Time** – select to display task end time in the tasks list.

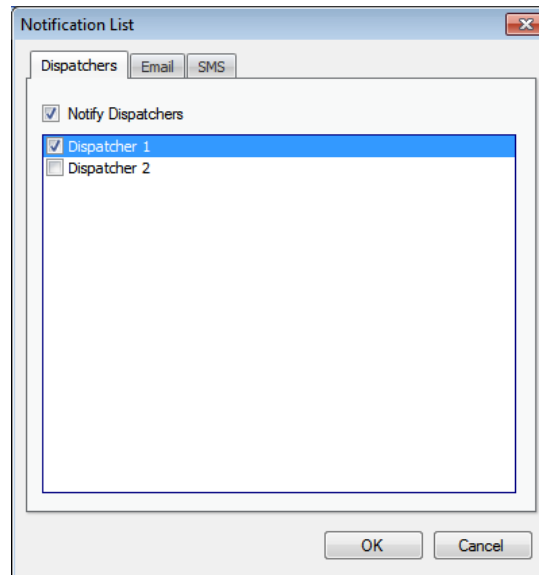
Click «OK» to save new template.

- **Text** – type in message text in the field;
- **Deadline** – select task end time;
- **End time** – select time and date to finish the task.

Note: when end time selected, do not select deadline option.

- Notify on status changes – select to send notifications to when Job Ticket status changes to Dispatchers, email and/or sms groups;
- Notify if ticket is not accepted by – select to send notifications to Dispatchers, email and/or sms groups if radios does not accept Job Ticket at the time set in the field below.

- Notification List – open to select recipients for selected notifications:

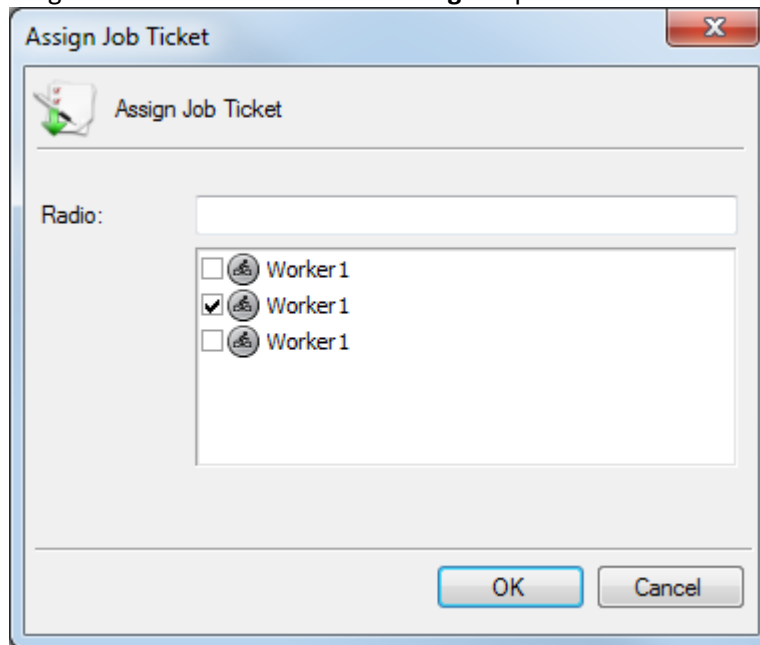


You can notify Dispatchers by Notifications in the Dispatch Console (check **Notify Dispatchers**), Email groups by sending emails to dedicated email groups (go to Email tab and check **Notify by Email**) and phone users by sending smsm to a dedicated sms groups (go to SMS tab and check **Notify by SMS**). Then select Dispatchers/Email groups or SMS groups and click «**OK**» to save notification settings.

- **Priority** – select task priority in the dropdown list;
- **Comment** – add a comment for new task;

Click «**Preview**» button to see new task preview.
Click «**OK**» to add new task.

Select the task in the list. Right-click the task and select «Assign» option:



Type in radio name in the «Radio» field to find and select a radio or select radio to assign the task in the list. Click «OK» to assign the task to selected radio.

Selected radio will receive a task.

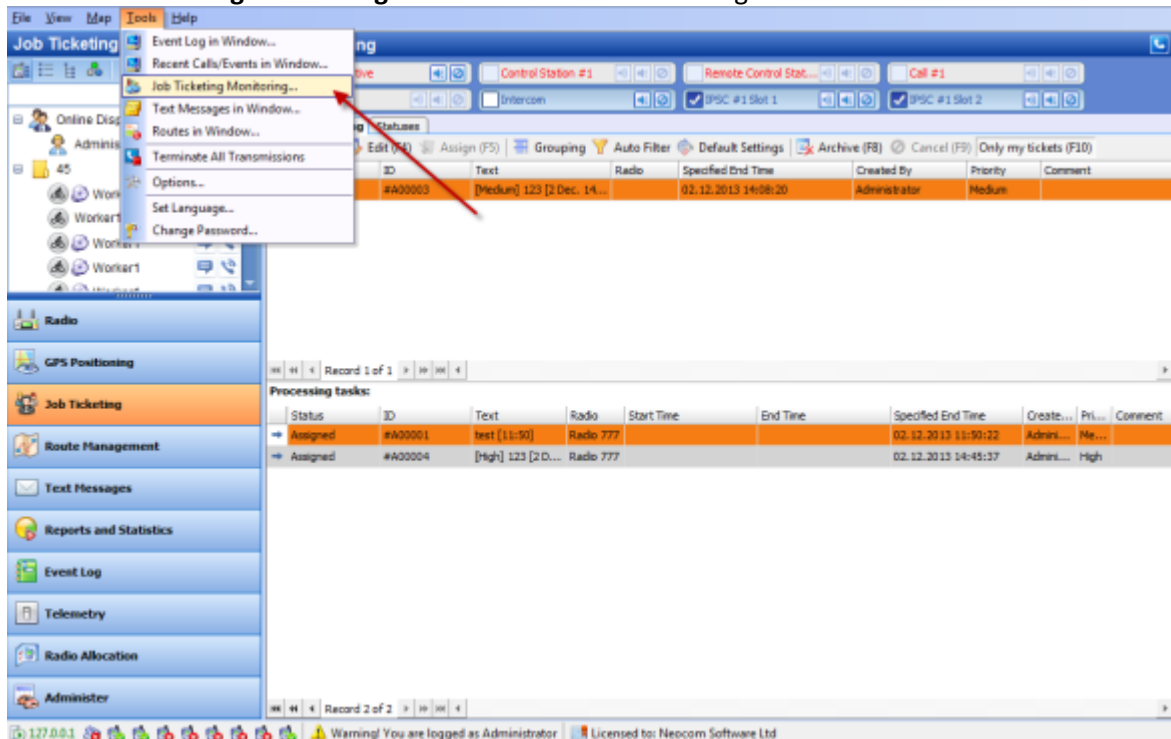
Radio subscriber should reply the task using **Quick reply** or **Reply** option.

Note: Task names should be created according to **Tasks name table** on page 218.

When radio subscriber replies a task, it will be replaced in the Processing tasks field.

Click «Only my tickets» button (4) to view tickets created under current administrator account.

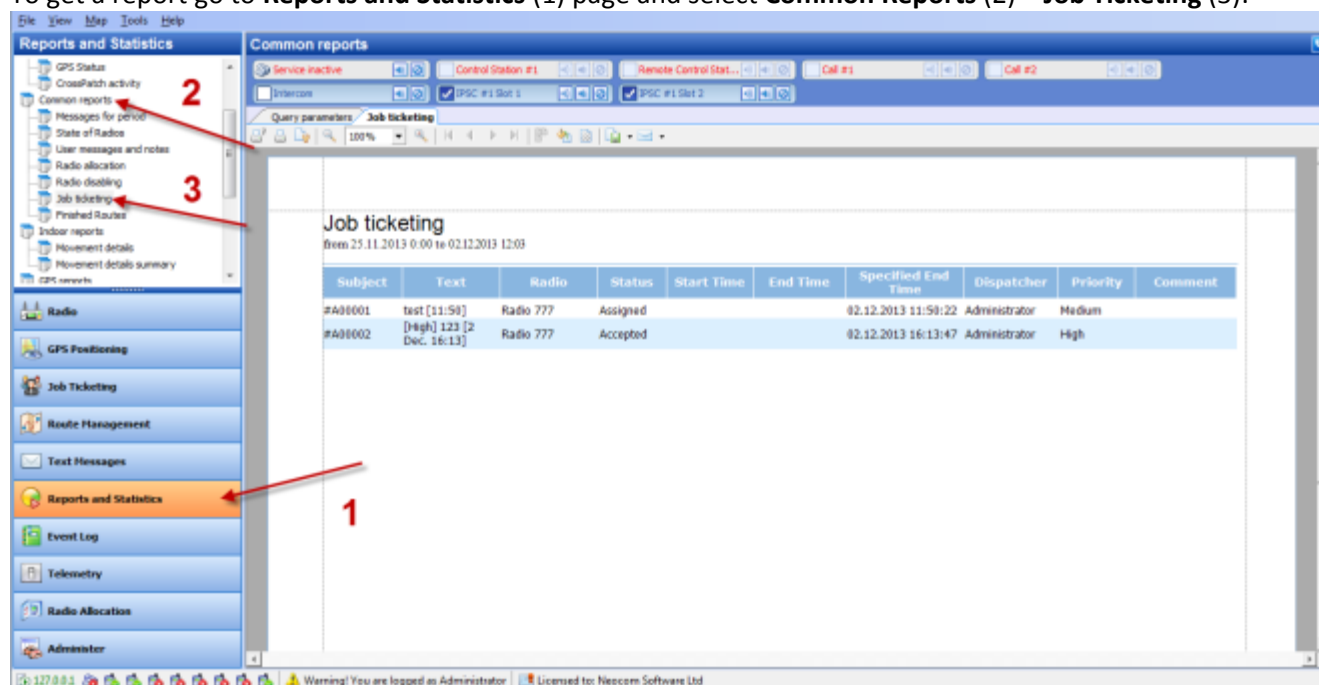
Go to **Tools – Job Ticketing Monitoring** to see Job Ticket statistic diagram:



For more details go to [Tools](#) section.

2. Job Ticketing monitoring.

To get a report go to **Reports and Statistics** (1) page and select **Common Reports** (2) – **Job Ticketing** (3):



Job ticketing
 From 25.11.2013 0:00 to 02.12.2013 12:00

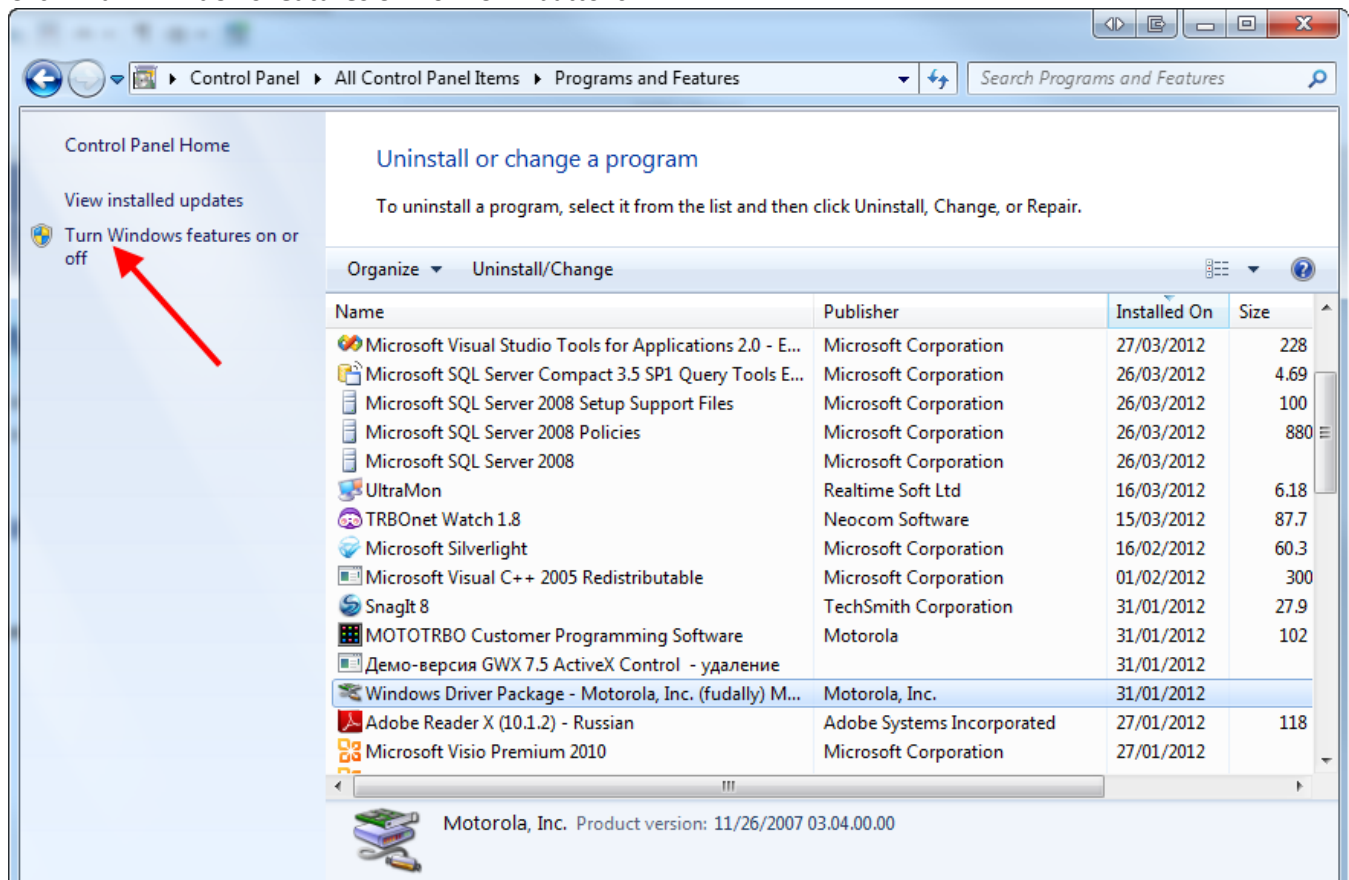
Subject	Text	Radio	Status	Start Time	End Time	Specified End Time	Dispatcher	Priority	Comment
#A00001	test [11:50]	Radio 777	Assigned			02.12.2013 11:50:22	Administrator	Medium	
#A00002	[High] 123 [2 Dec. 16:13]	Radio 777	Accepted			02.12.2013 16:13:47	Administrator	High	

Installing Web-Console

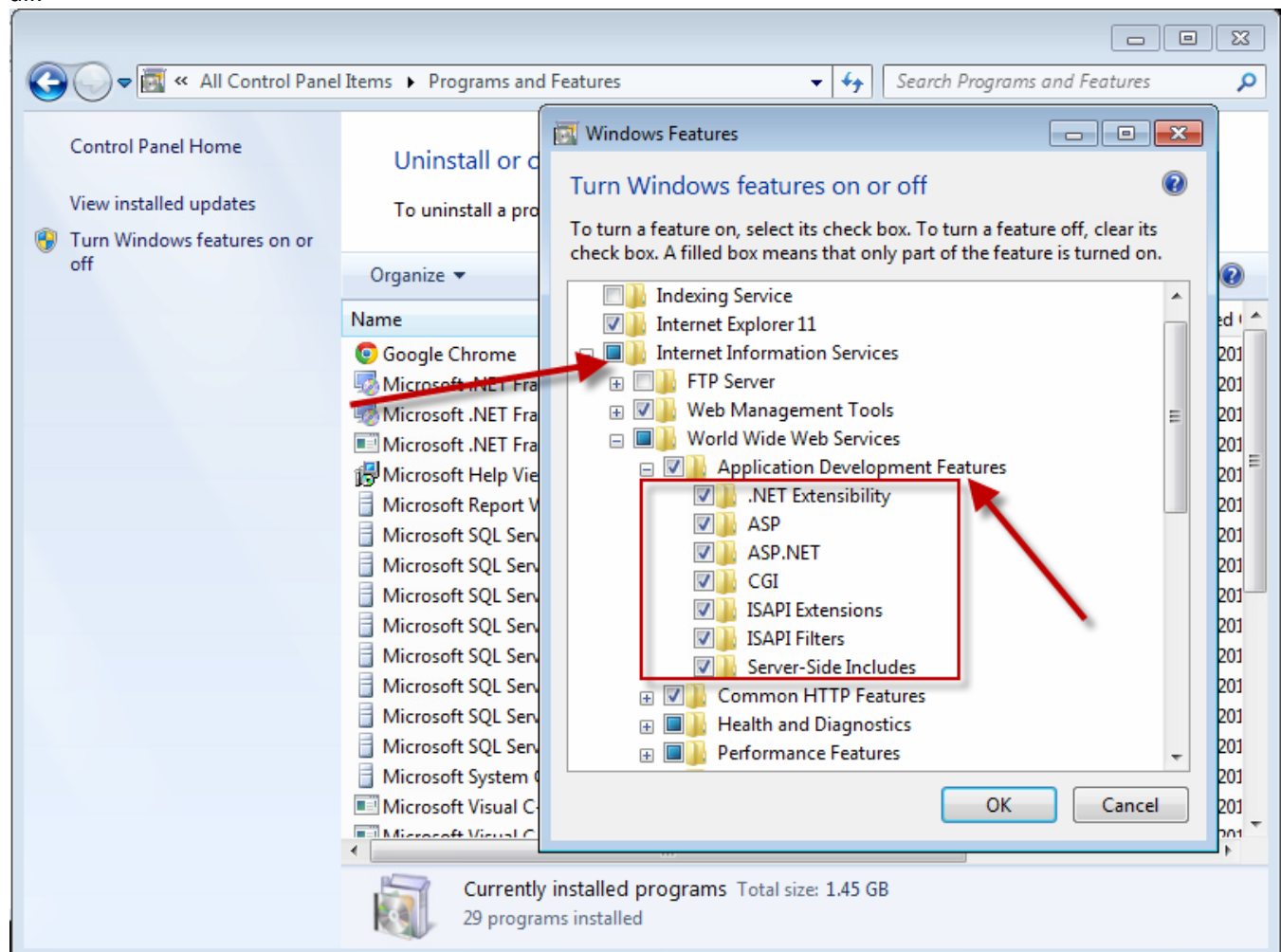
Web console is a special interface to connect to a TRBOnet RadioServer and monitor subscriber radios using a regular web browser on any device. For more details on web console interface see **User Guide**, «Web Console User Manual» chapter.

Installing Web Console

Go to **Start/Control Panel/Programs and Features**.
 Click «**Turn Windows features on or off**» or «**off**» buttons.

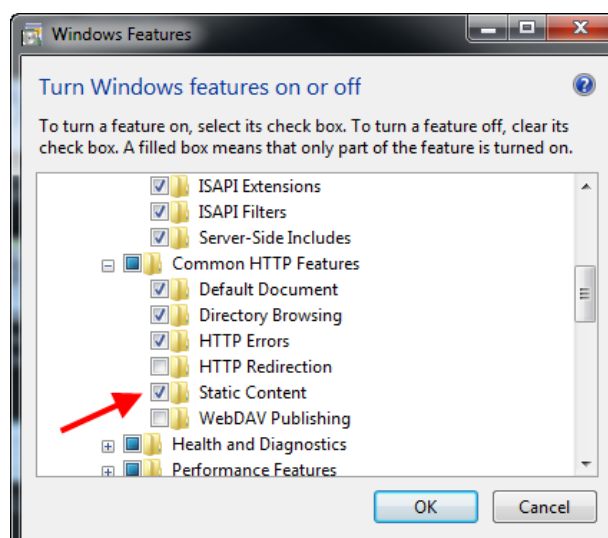


Go to **Internet Information Services/World Wide Web Services/Application Development Features** and select all:



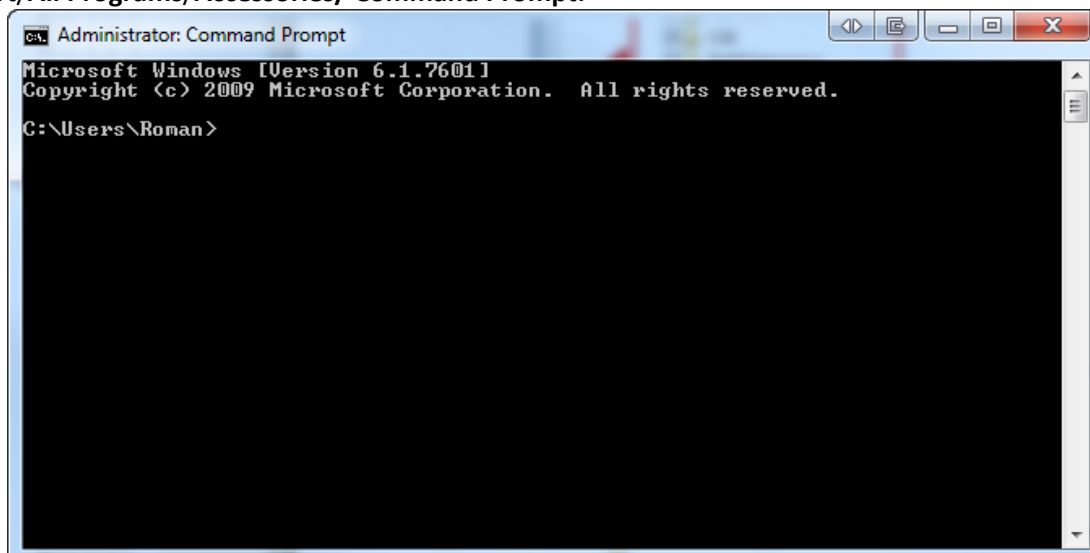
Click «OK».

Note: Make sure that **Common HTTP Features - Static Content** enabled.

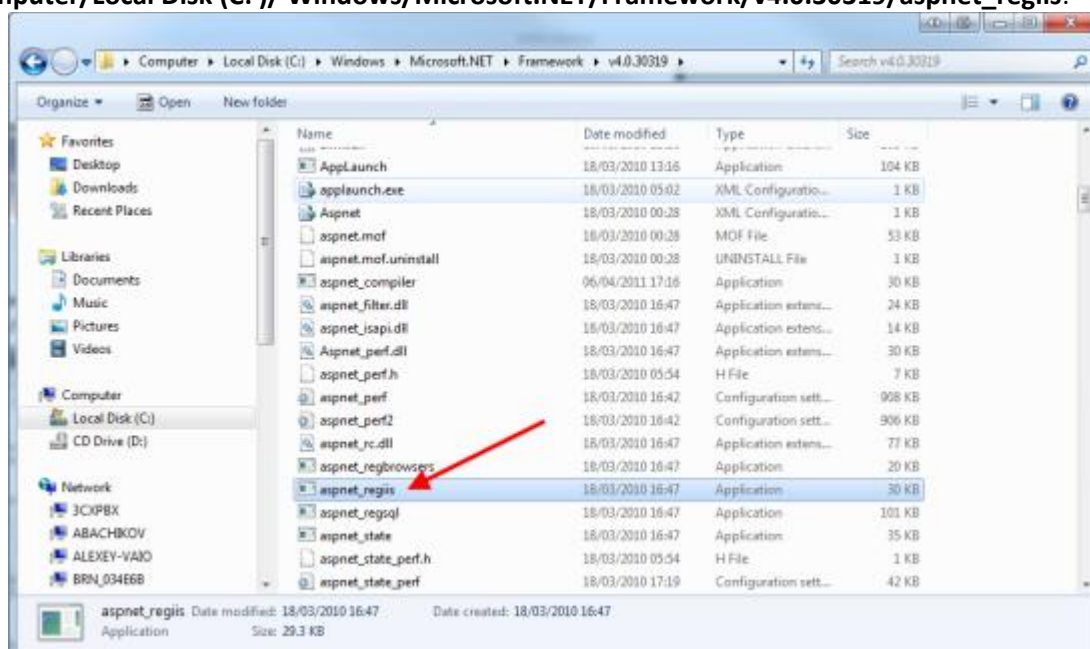


Restart your PC.

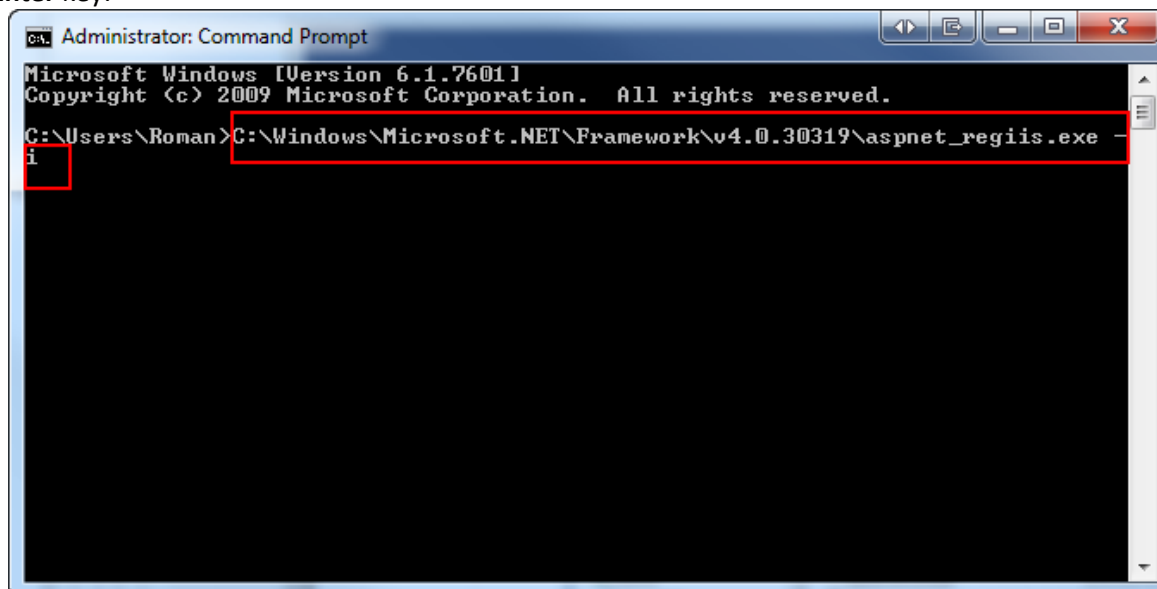
Go to **Start/All Programs/Accessories/ Command Prompt**:



Go to **Computer/Local Disk (C:)/ Windows/Microsoft.NET/Framework/v4.0.30319/aspnet_regiis**:

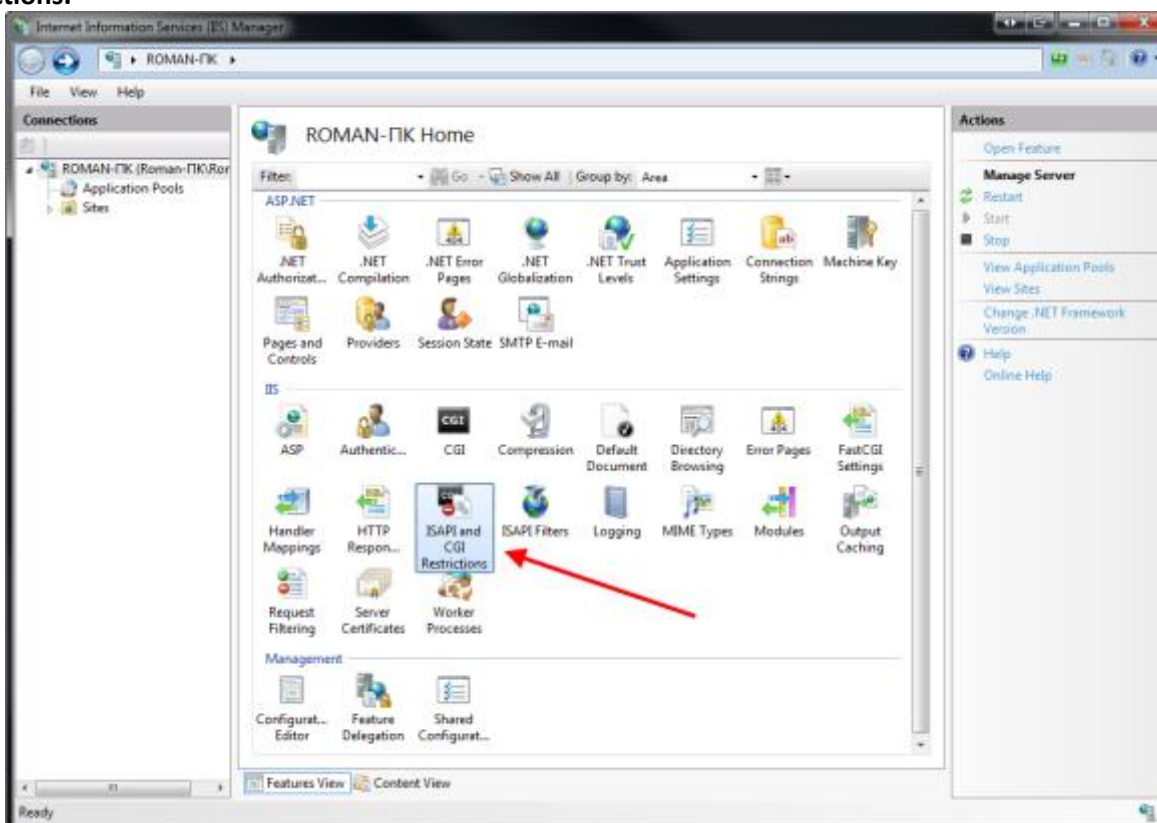


Drag the file **aspnet_regiis** into the **Command Prompt** then press the space bar and add the symbols - i. Then press **Enter** key:

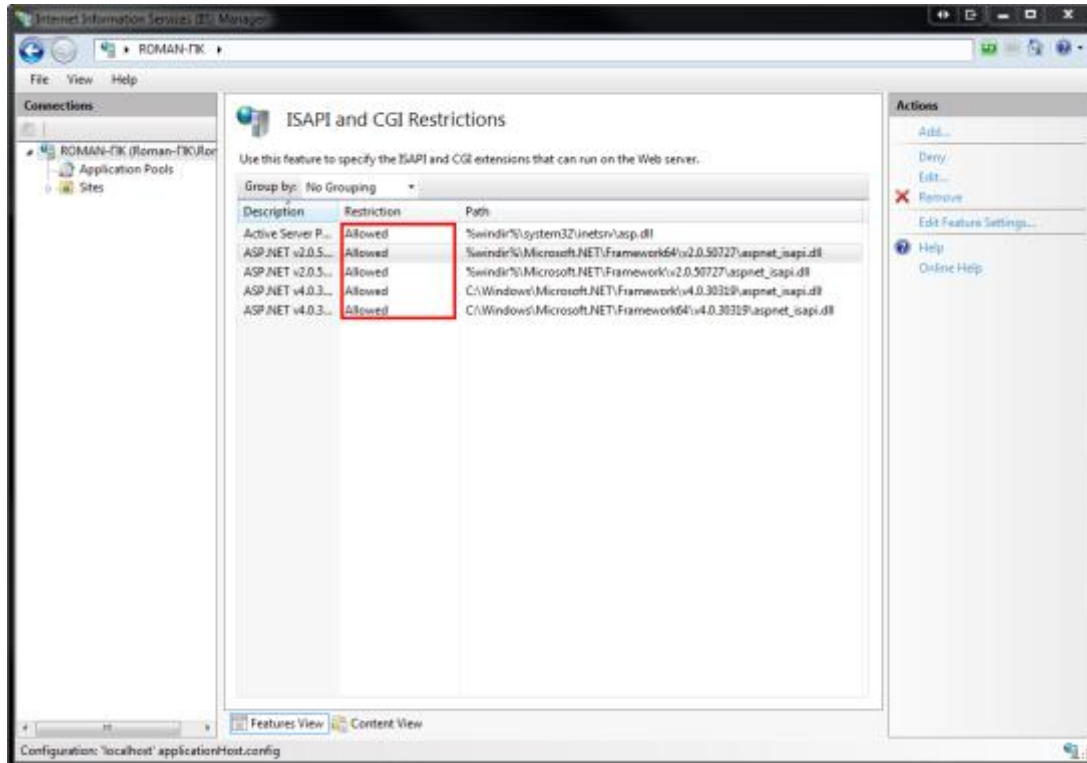


Go to **Control Panel/Administrative Tools**.

Double click «**Internet Information Services (IIS) Manager**» shortcut and double click **ISAPI and CGI Restrictions**.

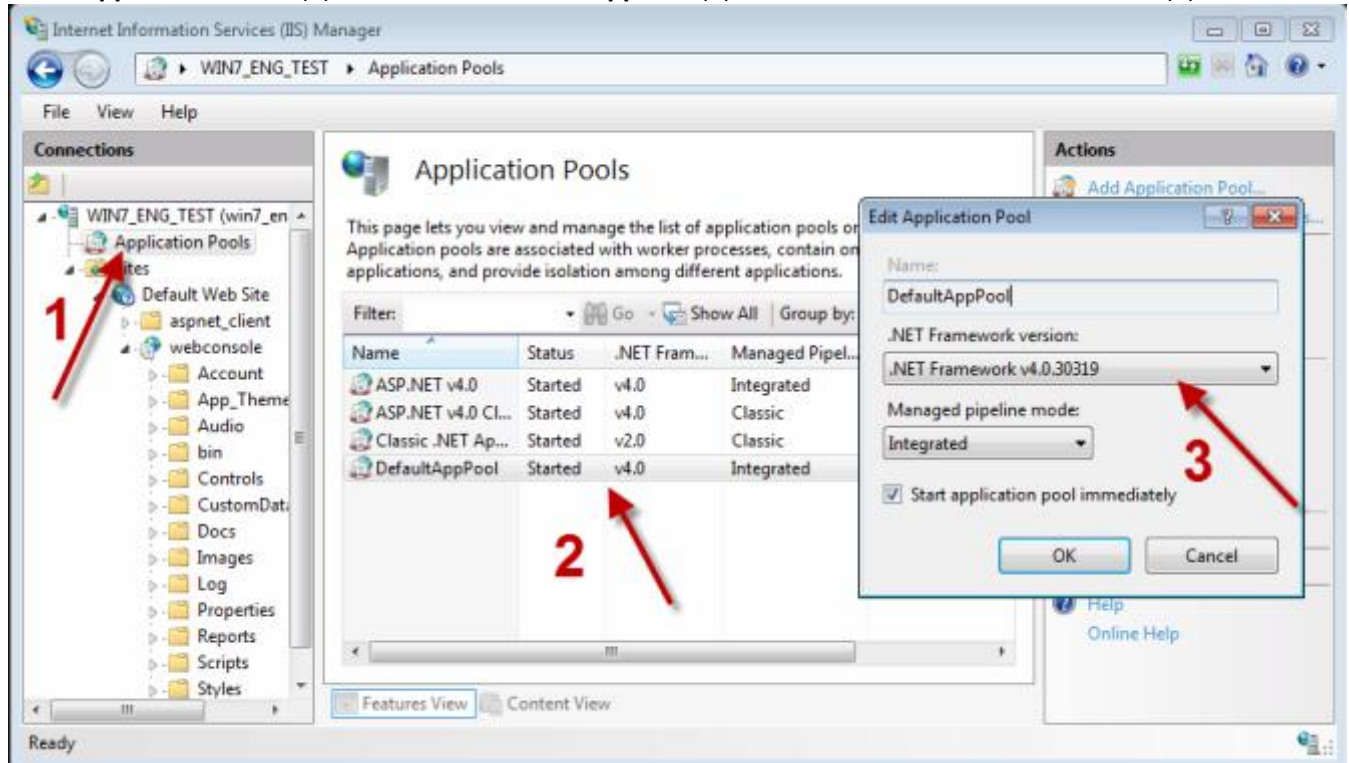


In the column restrictions set **Allowed** in all lines:

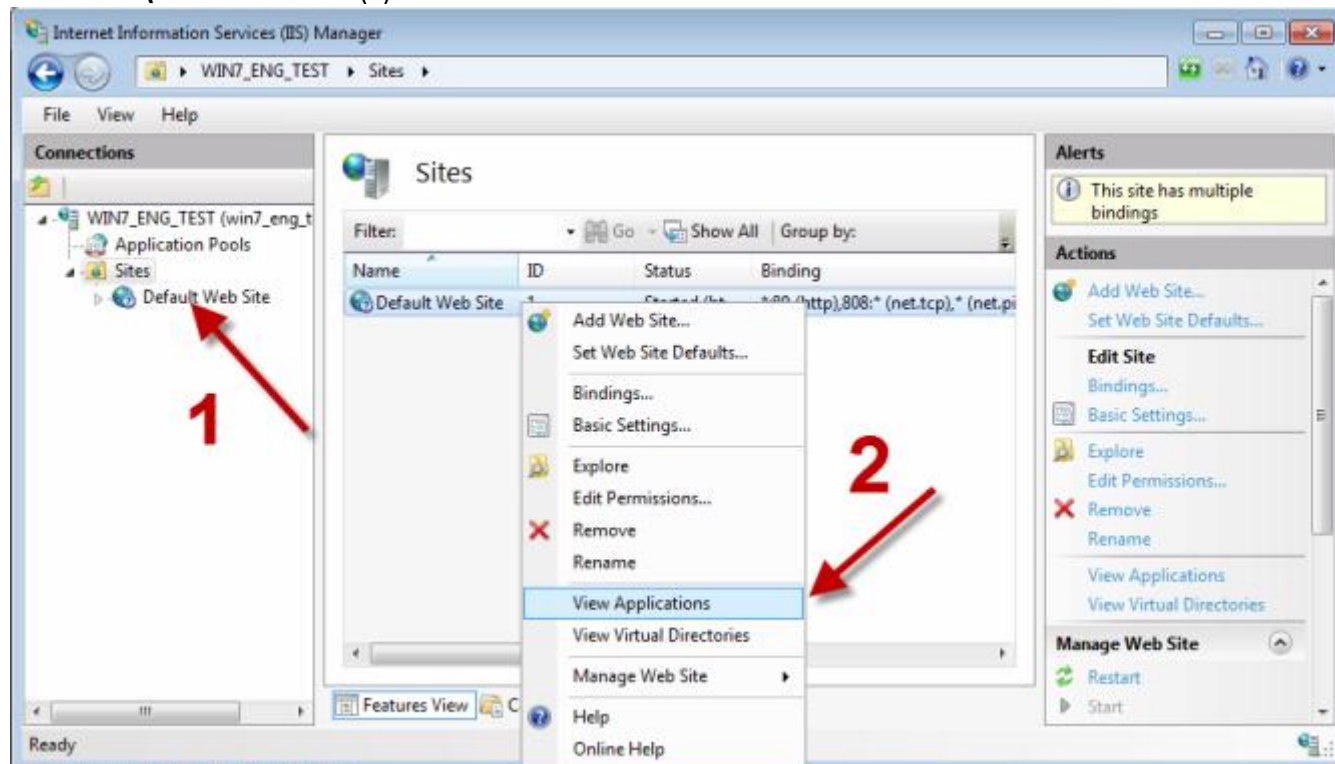


Copy the Web Site archive **WebConsole** to **Computer/ Local Disc (C:)/ inetpub** to create the folder for web console.

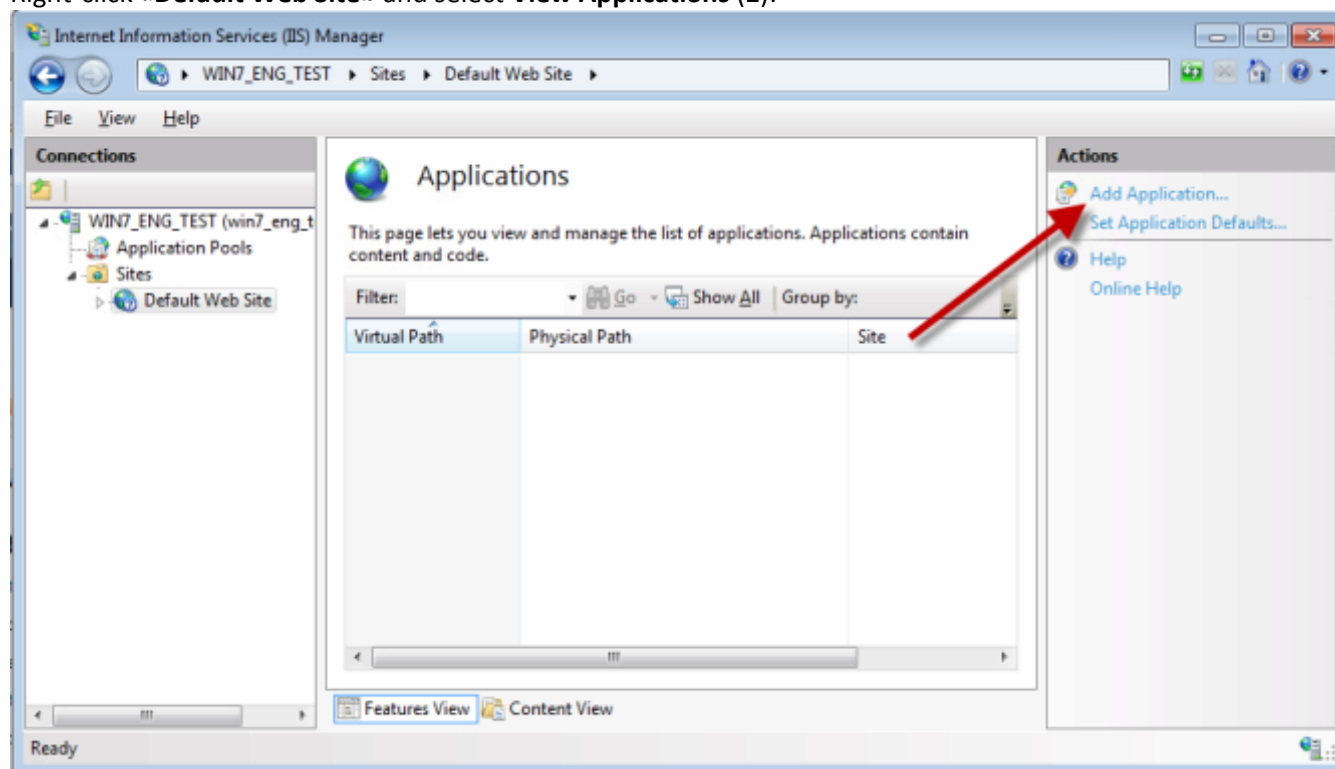
Go to **Application Pools** (1). Double-click **DefaultAppPool** (2) and check **.Net Framework** version (3):



Go to **Sites\Default web site (1)**:



Right-click «**Default Web Site**» and select **View Applications (2)**:



Specify the **Alias** and **Physical path** for default application:

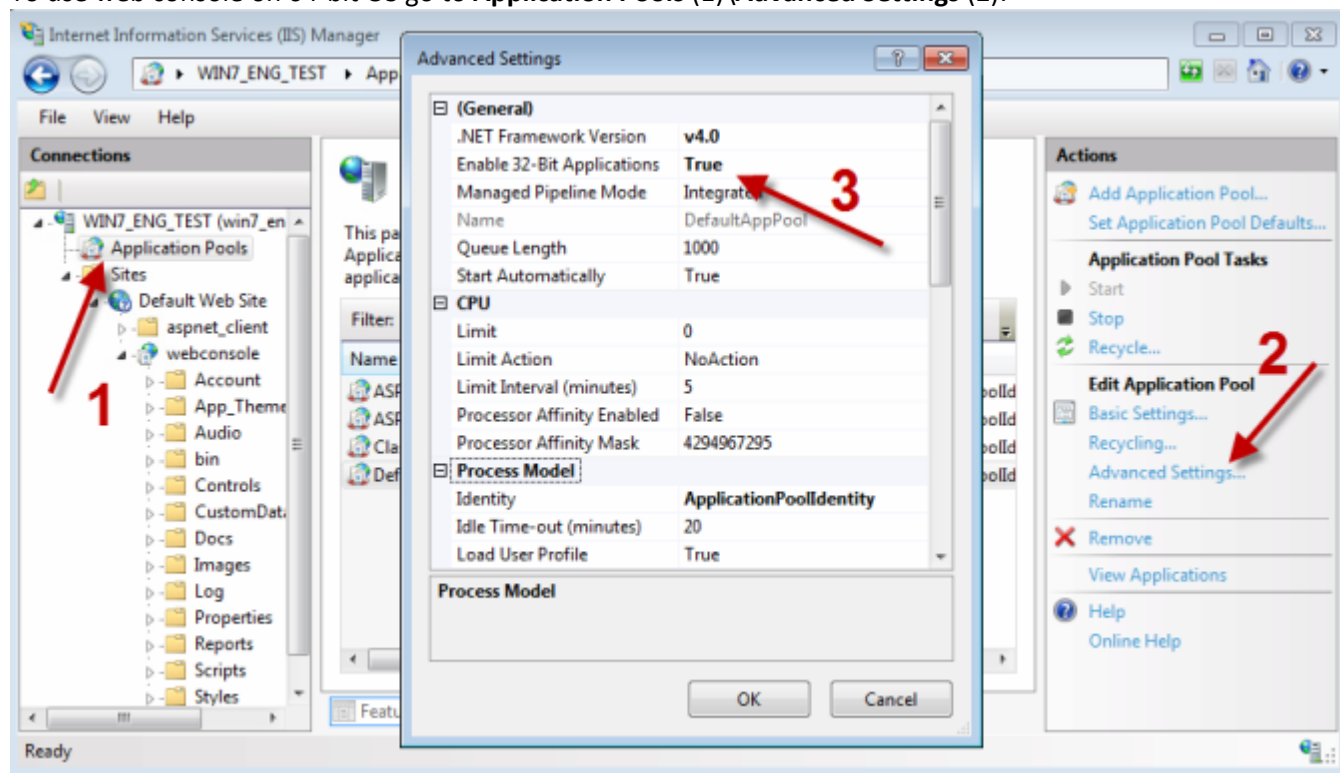
The 'Add Application' dialog box contains the following elements:

- Site name:** Default Web Site
- Path:** /
- Alias:** Webconsole
- Application pool:** DefaultAppPool
- Example:** sales
- Physical path:** C:\inetpub\WebConsole
- Pass-through authentication:** (checkbox)
- Buttons:** Connect as..., Test Settings..., Select..., OK, Cancel

Red arrows in the image point to the 'Alias' field, the 'Physical path' field, and the 'OK' button.

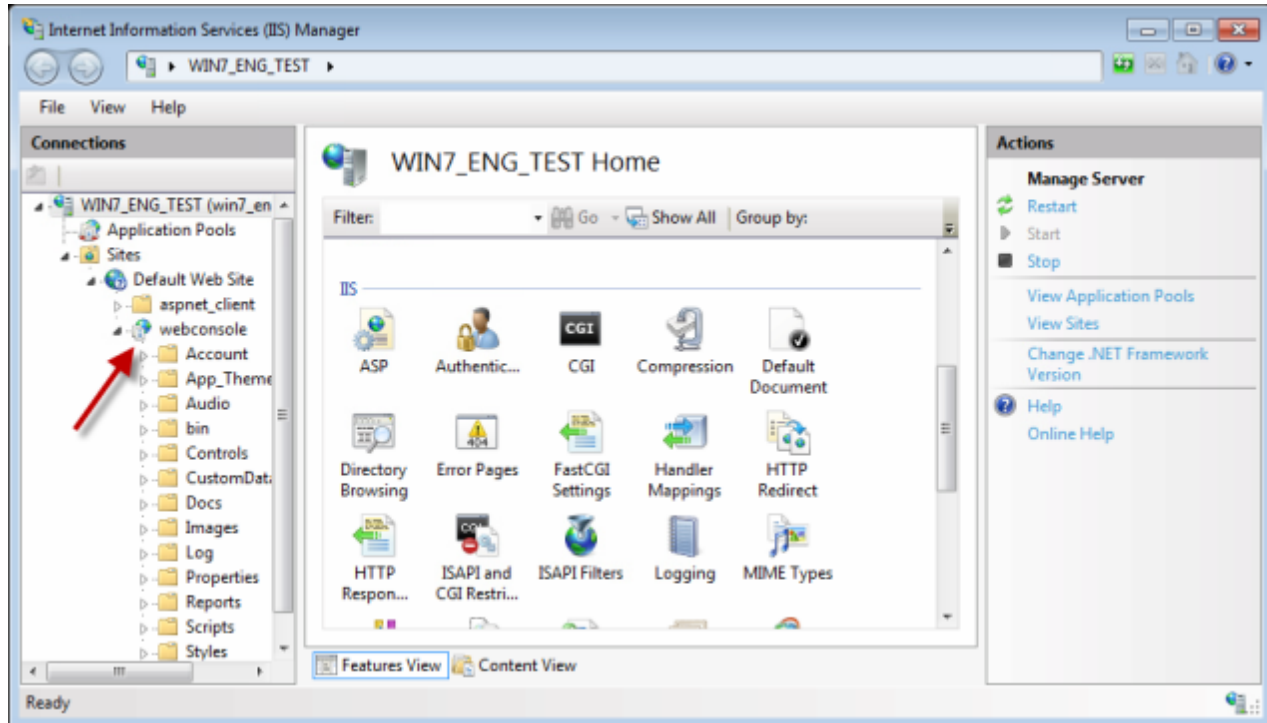
Browse folder with unarchieved web console.
Click «**OK**».

To use web console on 64-bit OS go to **Application Pools (1)\Advanced Settings (2):**



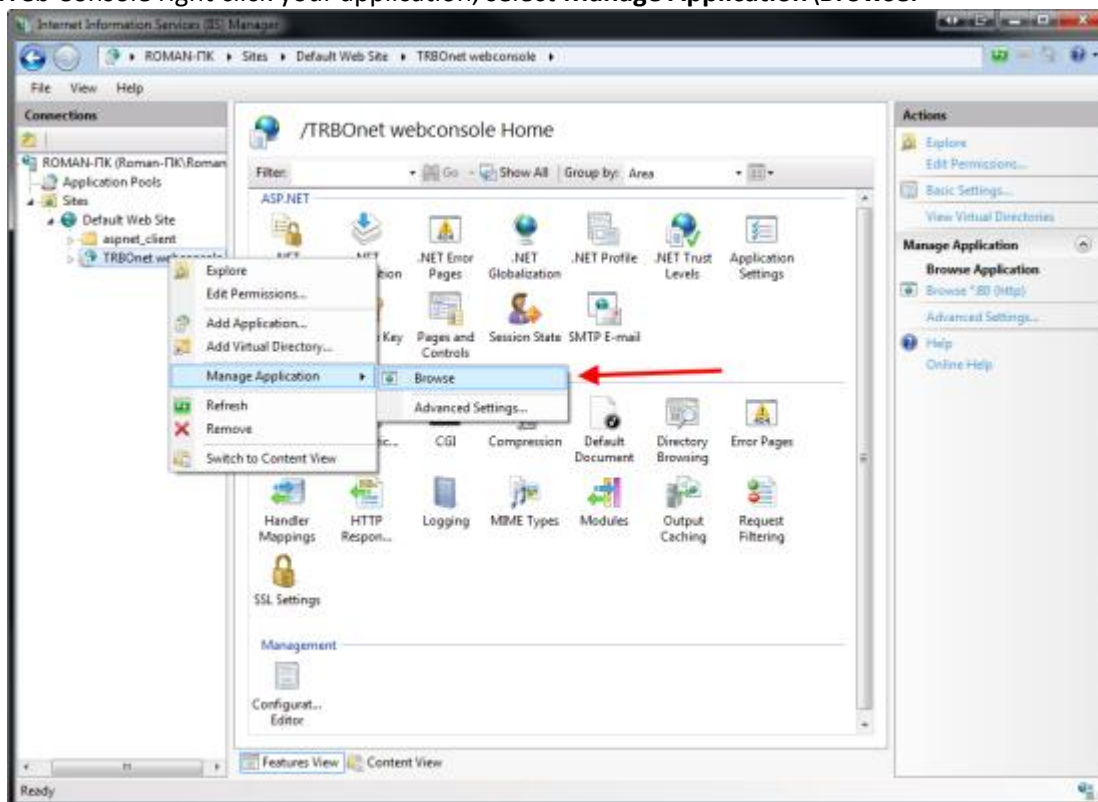
And select **Enable 32-Bit Applications – True (3).**

Web console is added in the list of default web sites:

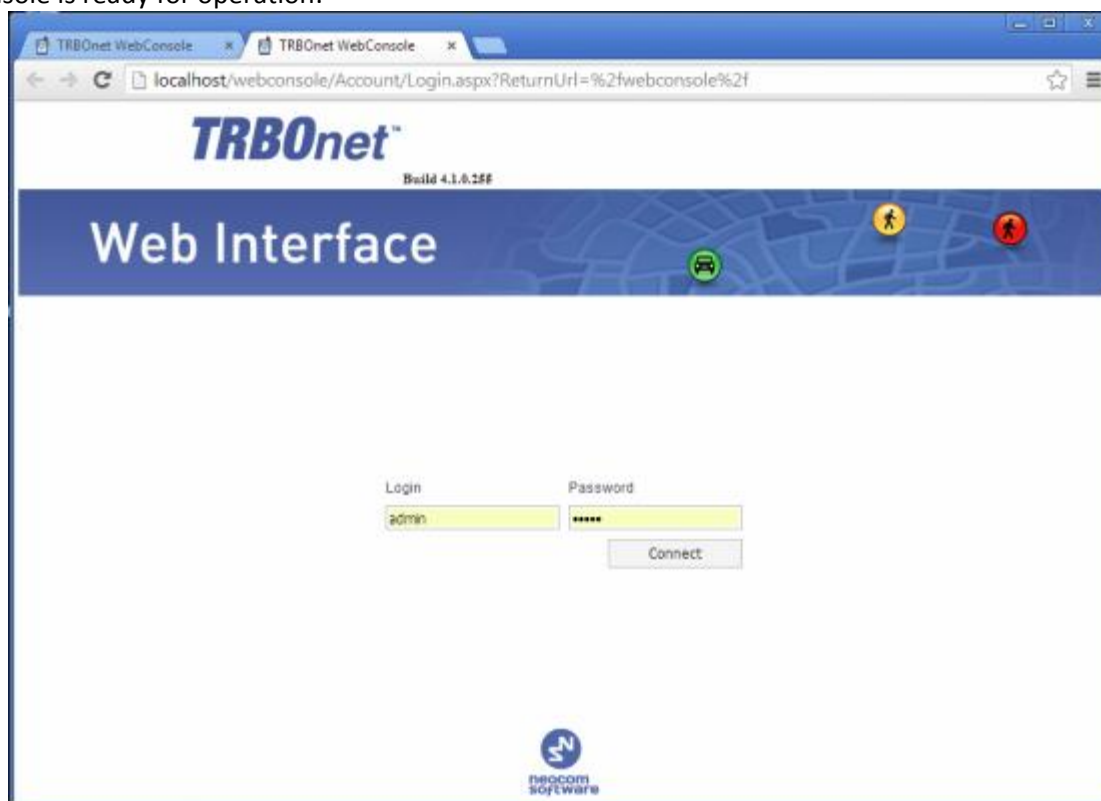


Note: make sure your account has sysadmin privileges (for more details see [Appendix B: Configure MS SQL Server 2012 for Local System Account During Setup](#) and [Appendix C: Grant Sysadmin Role to Local System Account in Installed MS SQL Server 2012](#)) and the database connection is successful (see [Database Authentication](#) section).

To open Web Console right click your application, select **Manage Application\Browse**.



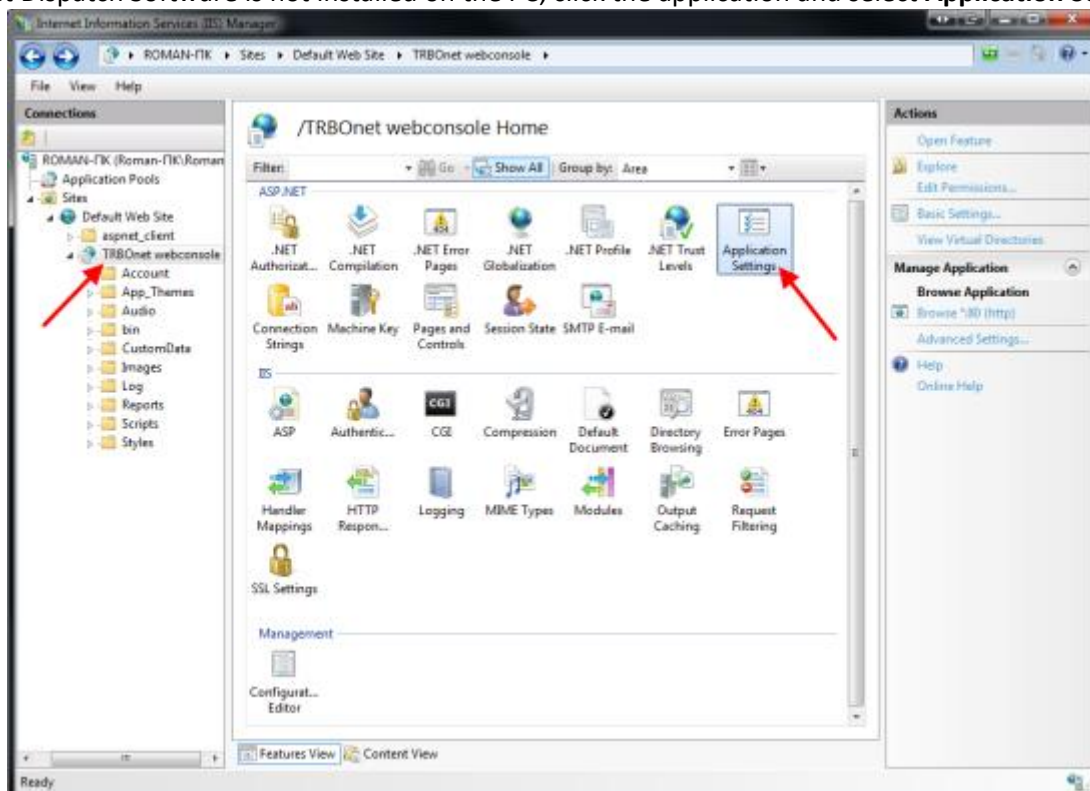
Web Console is ready for operation:



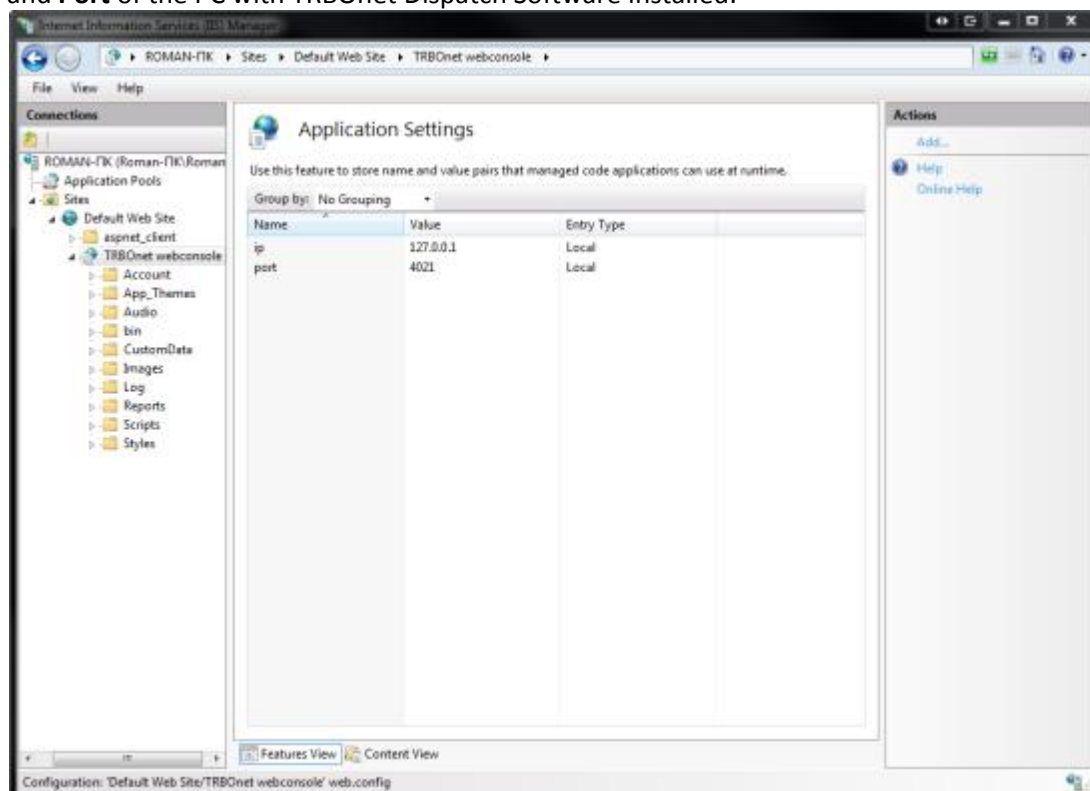
Type in **Login** and **Password** to launch the application.

Web Console Setup

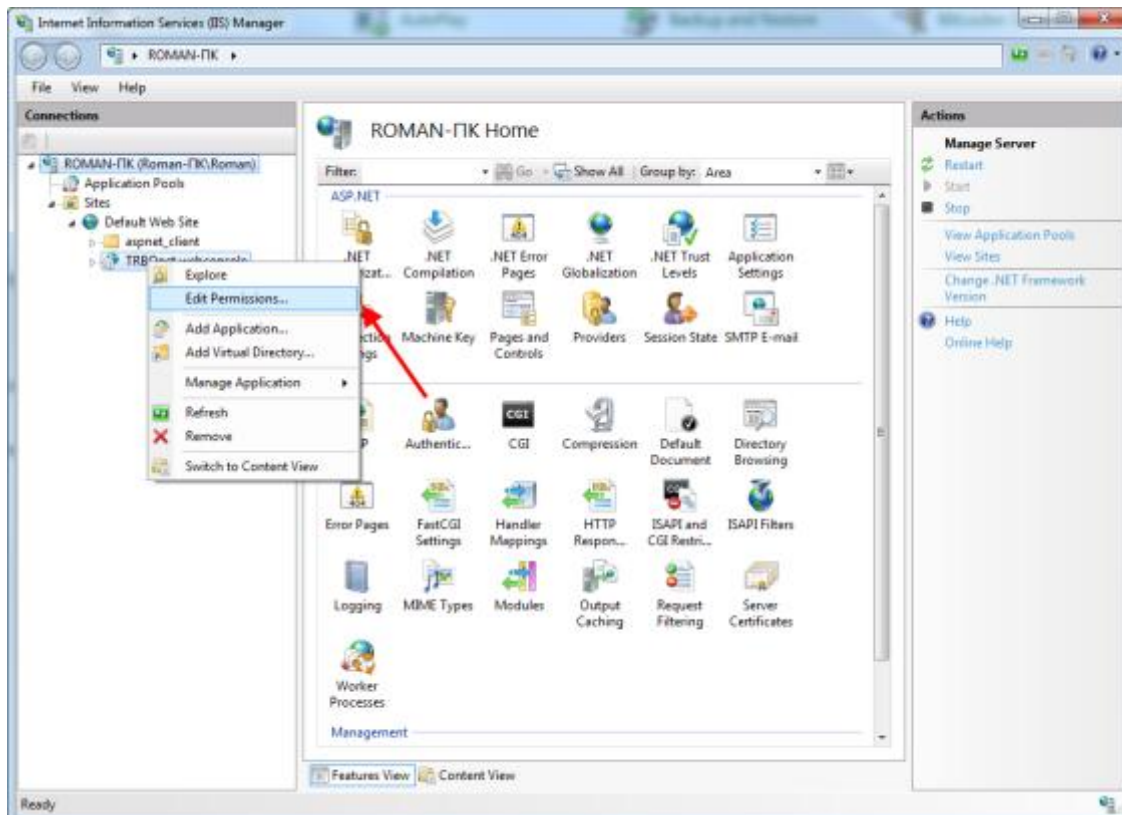
If TRBOnet Dispatch Software is not installed on the PC, click the application and select **Application Settings**:



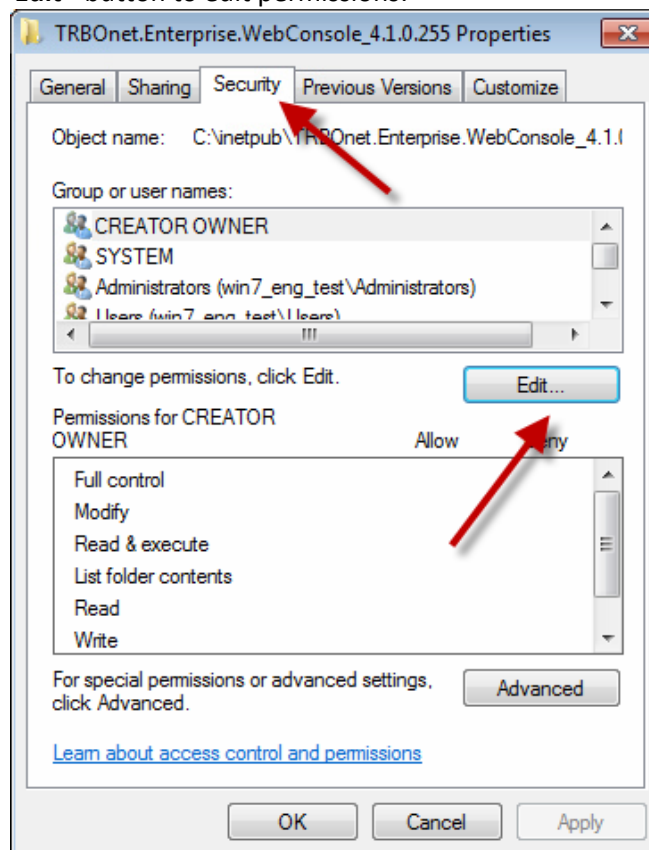
Specify **IP** and **Port** of the PC with TRBOnet Dispatch Software installed:



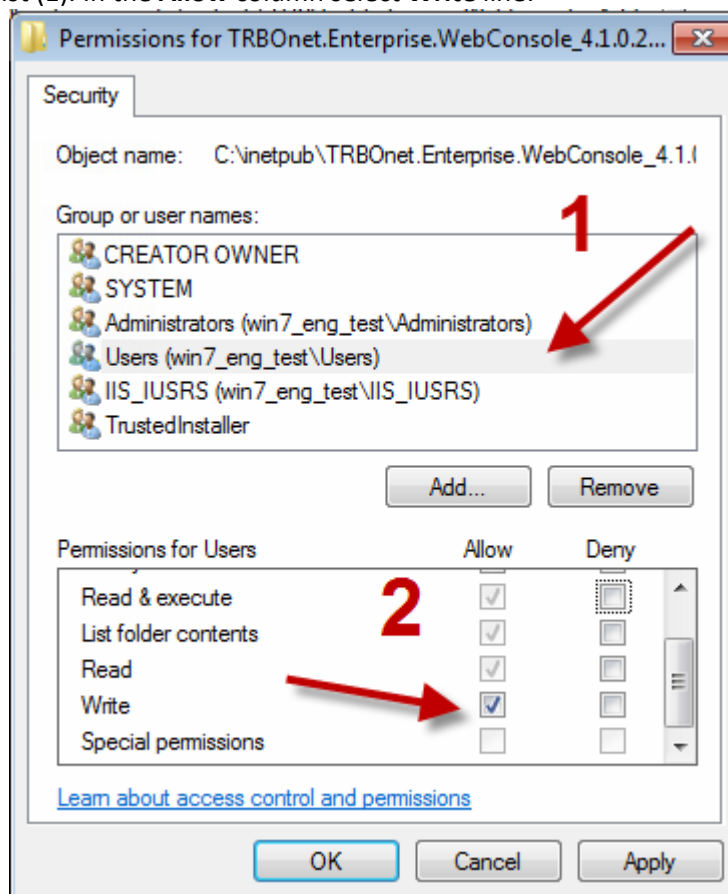
Right click **TRBOnet web console** and select **Edit Permissions**:



Go to **Security** tab and click «**Edit**» button to edit permissions:



Select **User** in the Users list (1). In the **Allow** column select **Write** line:



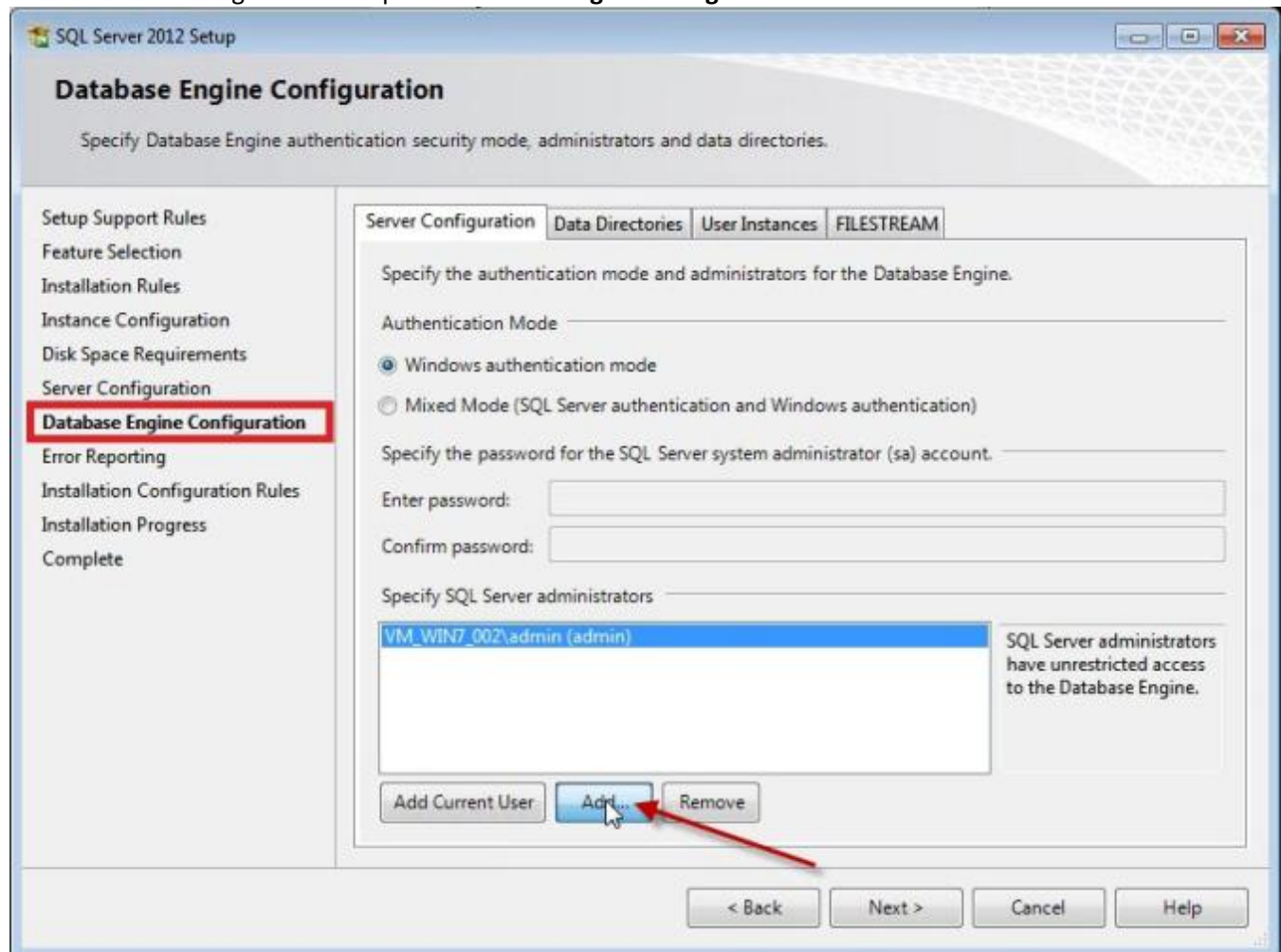
Click «**Apply**» button.
 Click «**Ok**».


Appendix A: MS SQL Server Edition Considerations

How to select SQL Server		
	0 - 200 subscriber units	200 + subscriber units
Windows 7, Windows Server 2008	MS SQL 2008 Express	MS SQL 2008 Standard
Windows 8, Windows Server 2012	MS SQL 2012 Express	MS SQL 2012 Standard

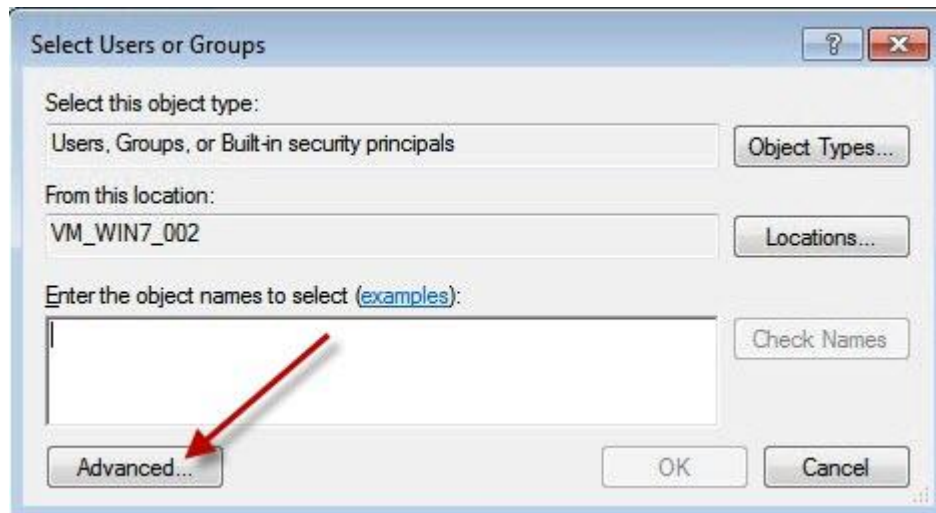
Appendix B: Configure MS SQL Server 2012 for Local System Account During Setup

During installation MS SQL Server 2012, you can grant required role to Windows **Local System** account in advance. On a configuration setup tab **Database Engine Configuration**:

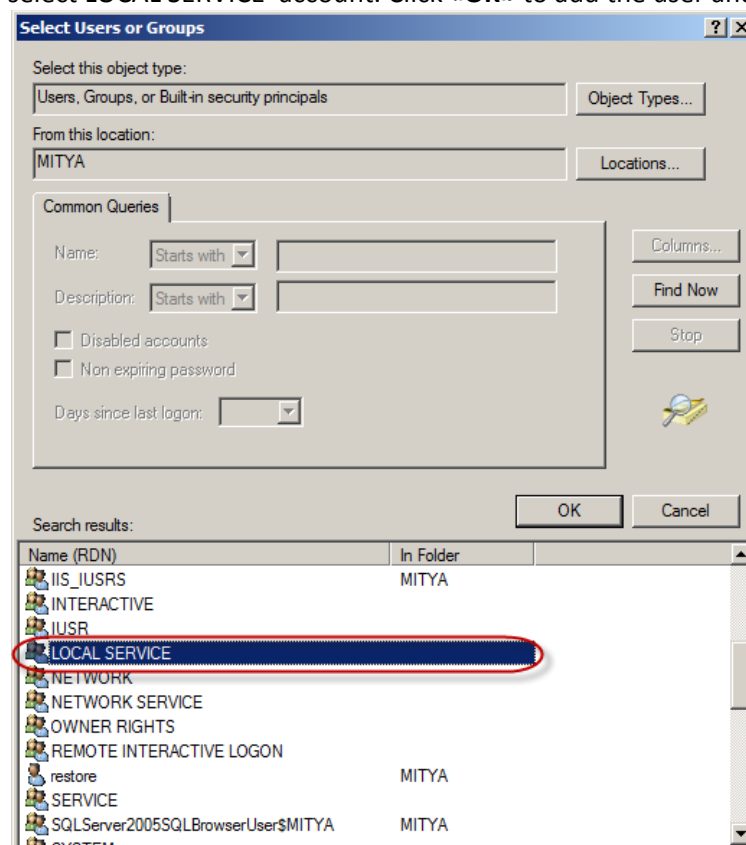


Click  button to add additional account to MS SQL Server administrators.

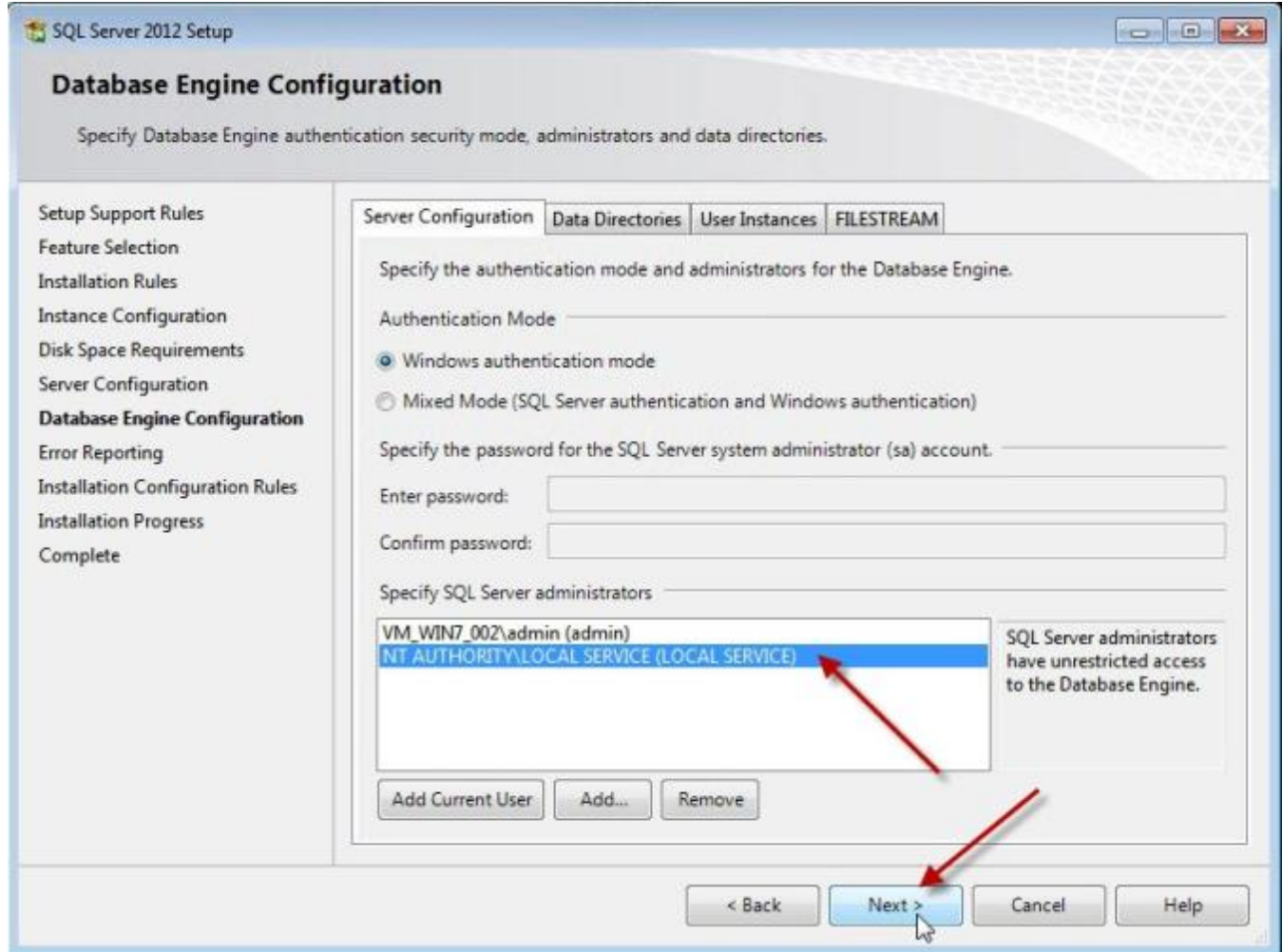
In the window **Select Users or Groups** hit the «**Advanced**» button in the **Enter the object names to select** field to find a required user name:



Click «**Find**» button and select **LOCAL SERVICE** account. Click «**OK**» to add the user and close the window.



Select **NT AUTHORITY\LOCAL SERVICE (LOCAL SERVICE)**:



SQL Server 2012 Setup

Database Engine Configuration

Specify Database Engine authentication security mode, administrators and data directories.

Setup Support Rules
 Feature Selection
 Installation Rules
 Instance Configuration
 Disk Space Requirements
 Server Configuration
Database Engine Configuration
 Error Reporting
 Installation Configuration Rules
 Installation Progress
 Complete

Server Configuration | Data Directories | User Instances | FILESTREAM

Specify the authentication mode and administrators for the Database Engine.

Authentication Mode

☒ Windows authentication mode
☐ Mixed Mode (SQL Server authentication and Windows authentication)

Specify the password for the SQL Server system administrator (sa) account.

Enter password:
 Confirm password:

Specify SQL Server administrators

VM_WIN7_002\admin (admin)
NT AUTHORITY\LOCAL SERVICE (LOCAL SERVICE)

Add Current User | Add... | Remove

SQL Server administrators have unrestricted access to the Database Engine.

< Back | **Next >** | Cancel | Help

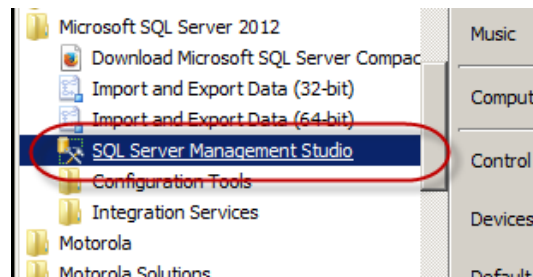
Click **Next >** button and follow the prompts to finish the installation.

Appendix C:

Grant Sysadmin Role to Local System Account in Installed MS SQL Server 2012

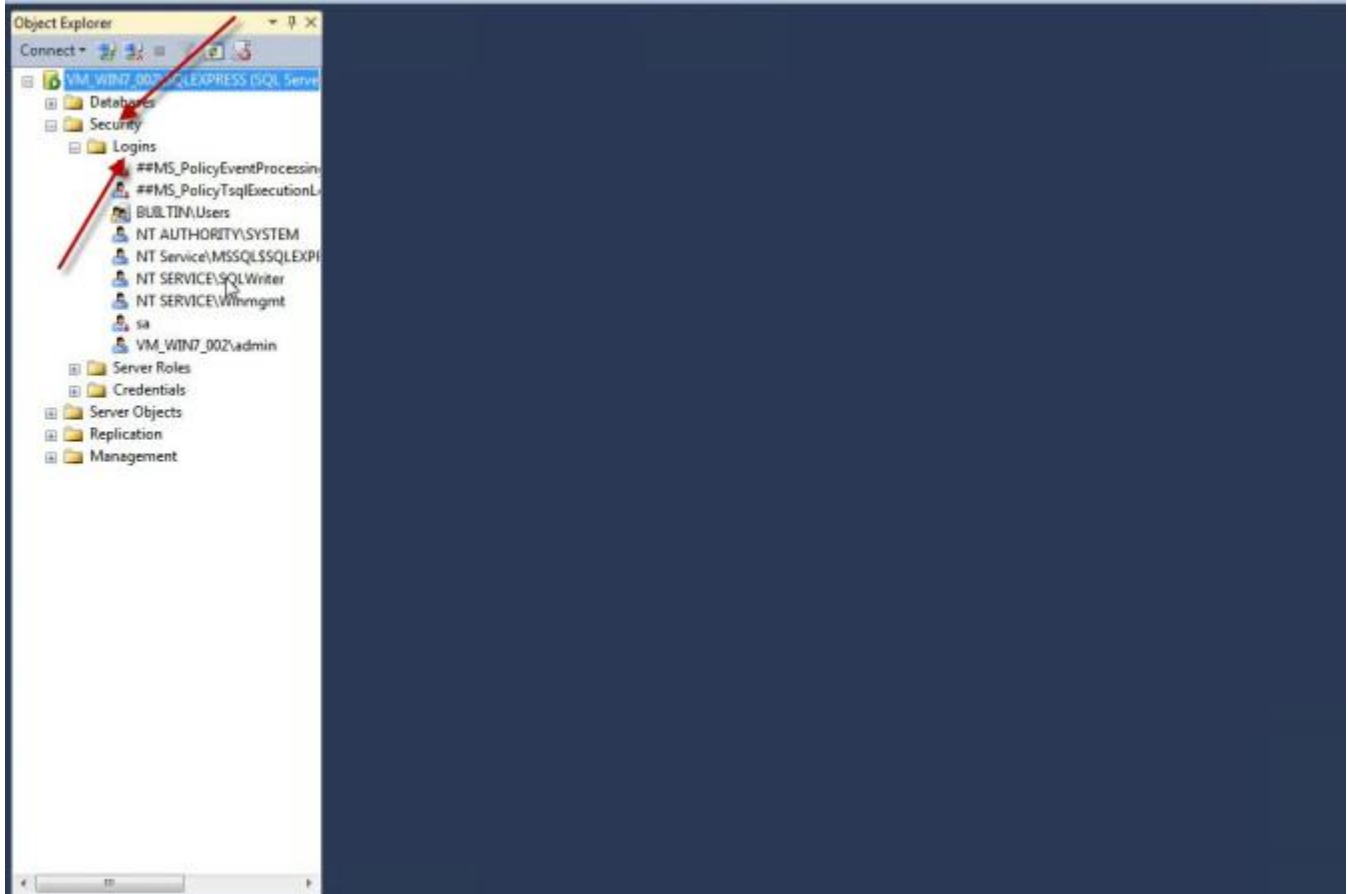
If you have already installed MS SQL 2012, you need to grant **sysadmin** role to **Local System** account in MS SQL Server 2012.

Run **SQL Server Management Studio** from Start menu:



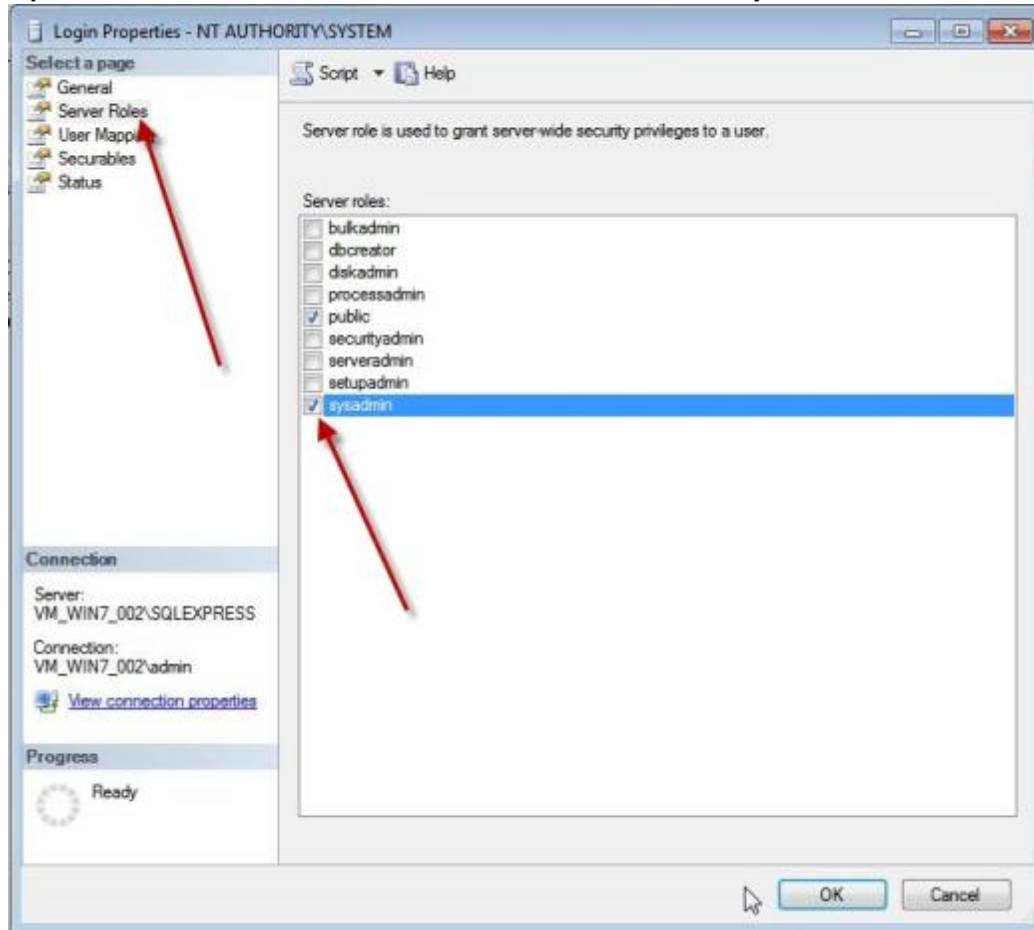
Connect to your database instance where TRBOnet database created.

Go to **Security** node and select **Logins**:



Right-click **NT AUTHORITY\SYSTEM** login and select **Properties**.

In «Login Properties» window select «Server Roles» and check the box «sysadmin».



Click «OK» to add **sysadmin** privileges to selected user.

Appendix D: Database and Audio Recordings Backup and Restore

Backup Configuration

TRBOnet Dispatch Software has an embedded mechanism of database and audio recordings backup. Initially, it already has two paths to store database and audio recordings.

For TRBOnet.Enterprise:

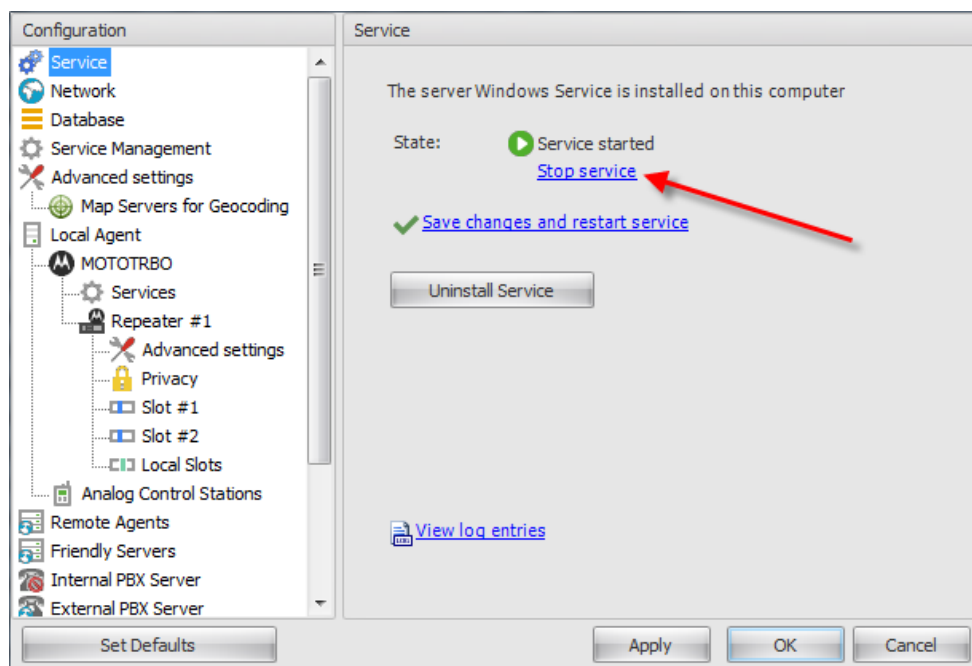
%ProgramData%\Neocom Software\TRBOnet.Enterprise\Backups and **%ProgramData%\Neocom Software\TRBOnet.Enterprise\Audio**.

For TRBOnet.Plus:

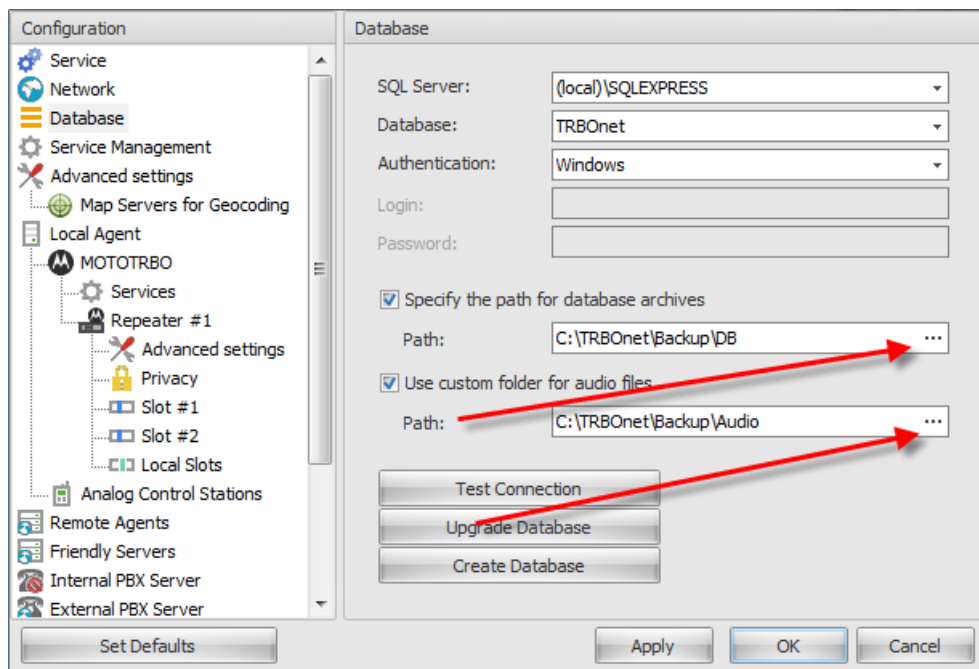
%ProgramData%\Neocom Software\TRBOnet.Plus\Backups and **%ProgramData%\Neocom Software\TRBOnet.Plus\Audio**.

Default paths can be changed:

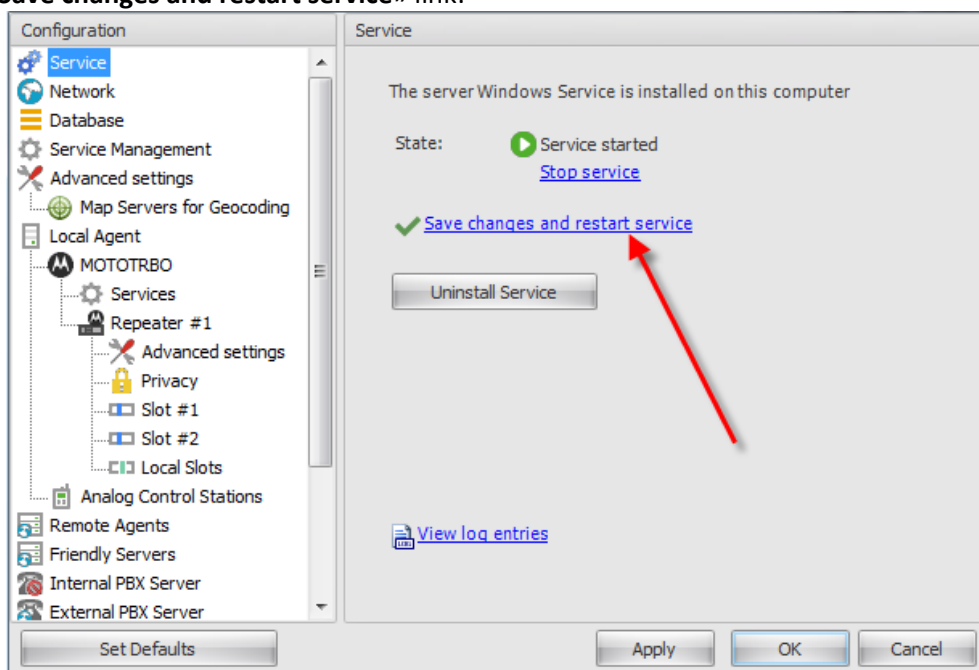
1. Open TRBOnet RadioServer**Configurator** and stop the TRBOnet RadioServer.



2. To customize backup folders, go to **Database** and select custom directory for the database (e.g. **C:\TRBOnetBackup\DB**) and audio files (e.g. **C:\TRBOnetBackup\Audio**). The database backup will be stored to selected directory.



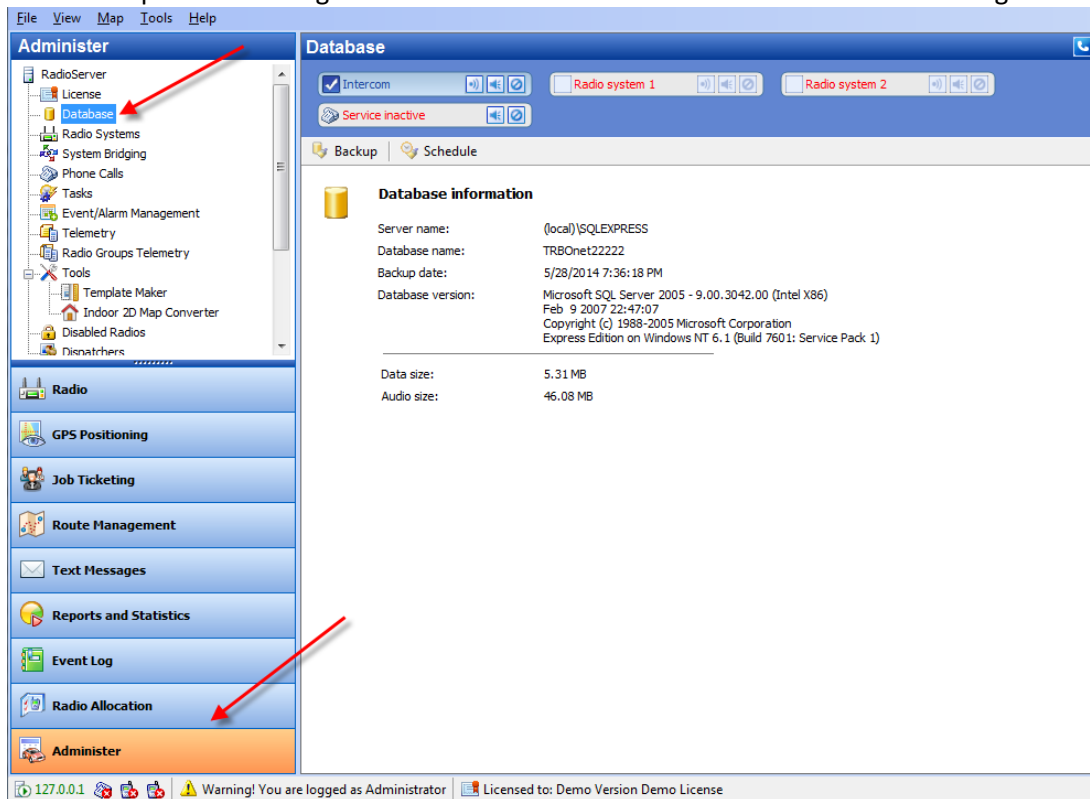
3. Hit «Save changes and restart service» link:



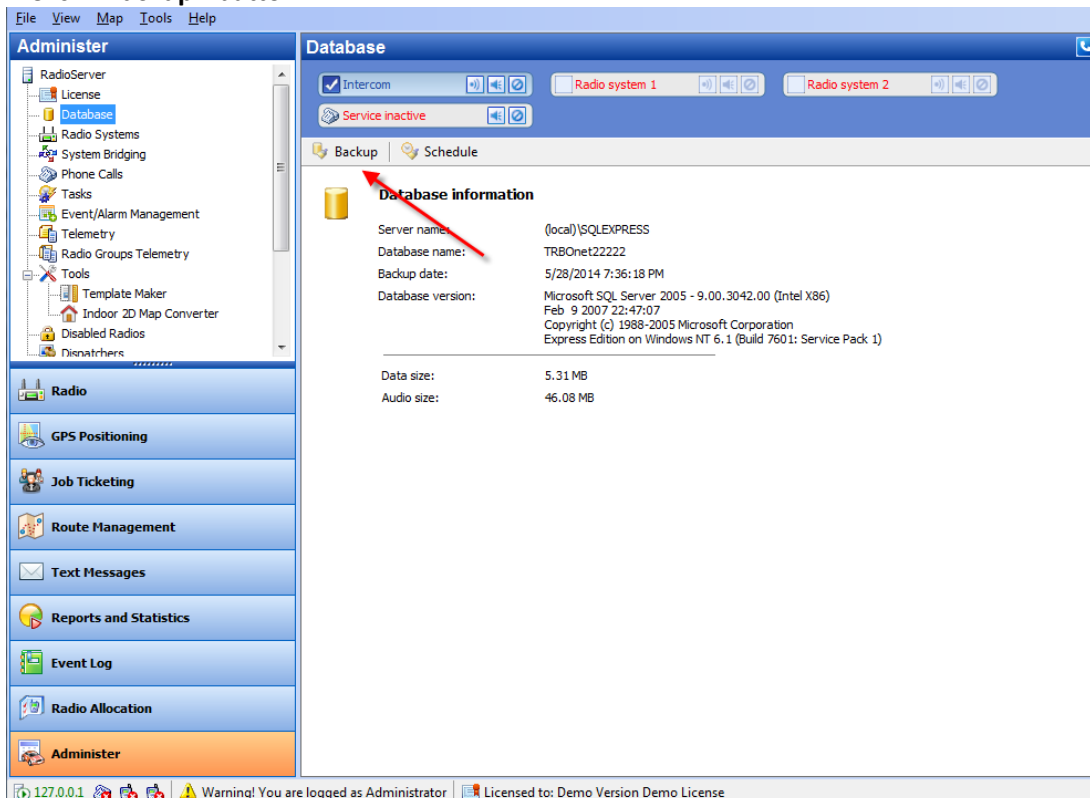
Backup Database and Audio Recordings

To back up the database and audio recordings do the following:

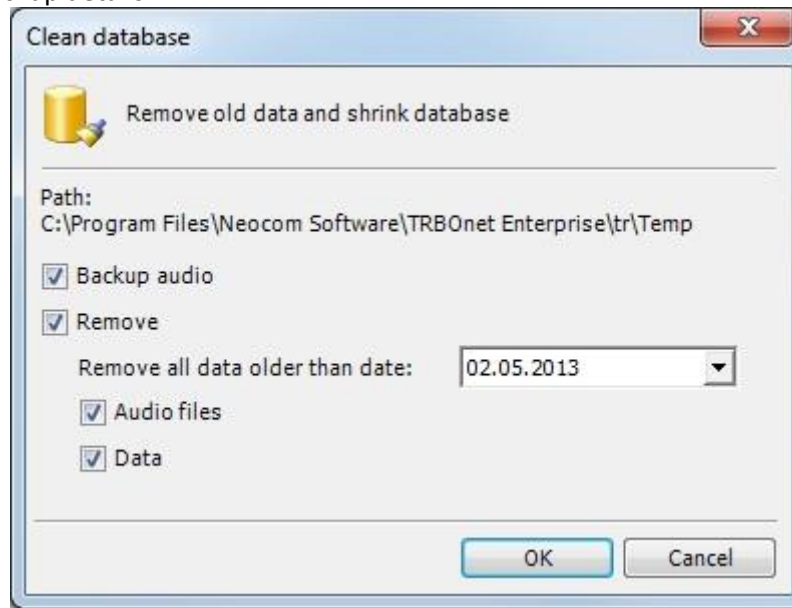
1. In the Dispatch Console go to **Administer** section and select **Database** in the Navigation tree:



2. Click «**Backup**» button:

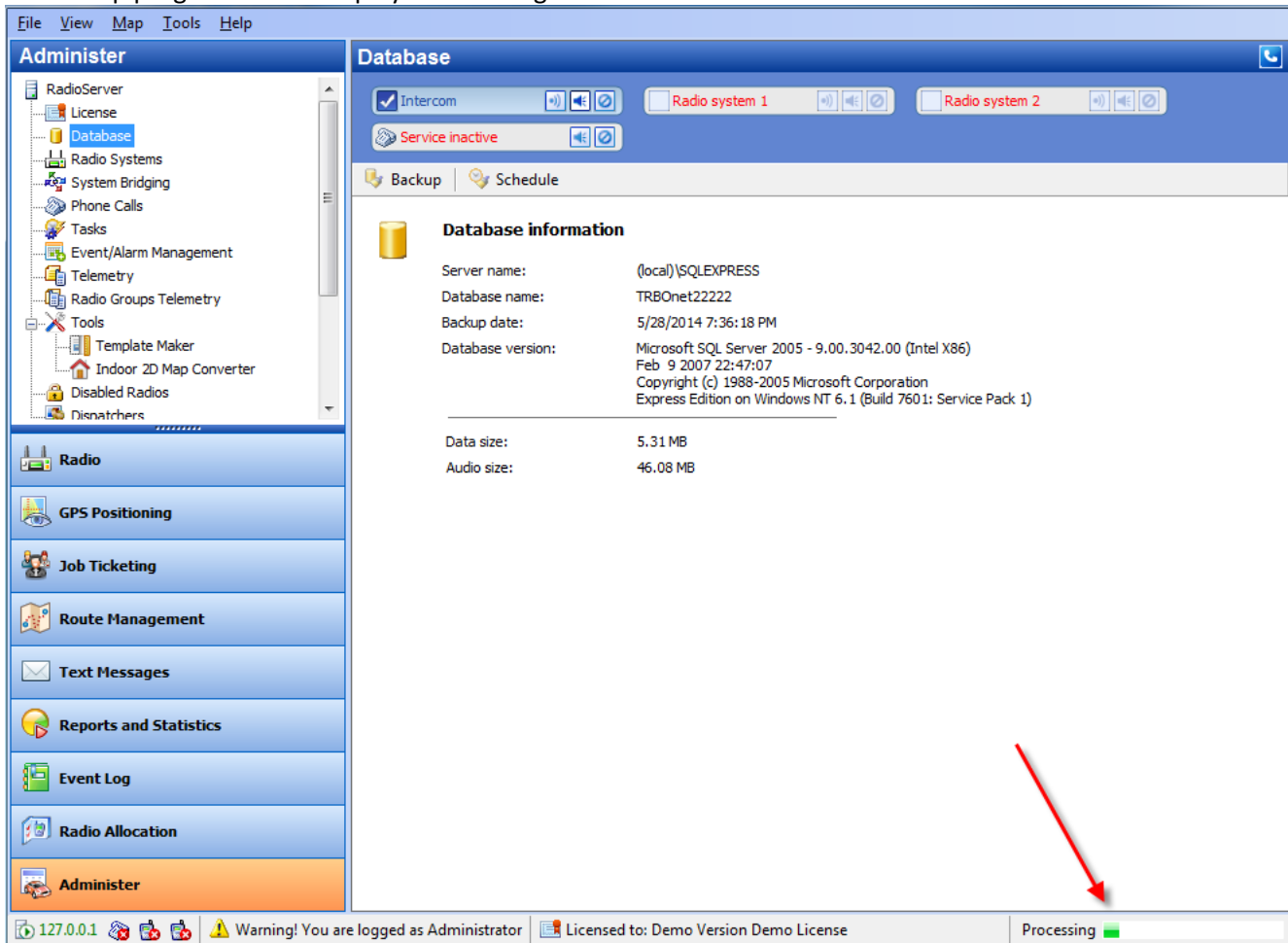


3. Specify Backup details:



- **Backup audio** - check to backup audio recordings;
- **Remove** - check to remove audio files and data from database). Remove all data older than date - select the date;
- **Audio Files** -check to remove audio files;
- **Data** - check to remove data.
- Click «**OK**» to run backup procedure.

Backup progress will be displayed in low-right corner:



4. In a while a ZIP archive will be created in two possible directories:

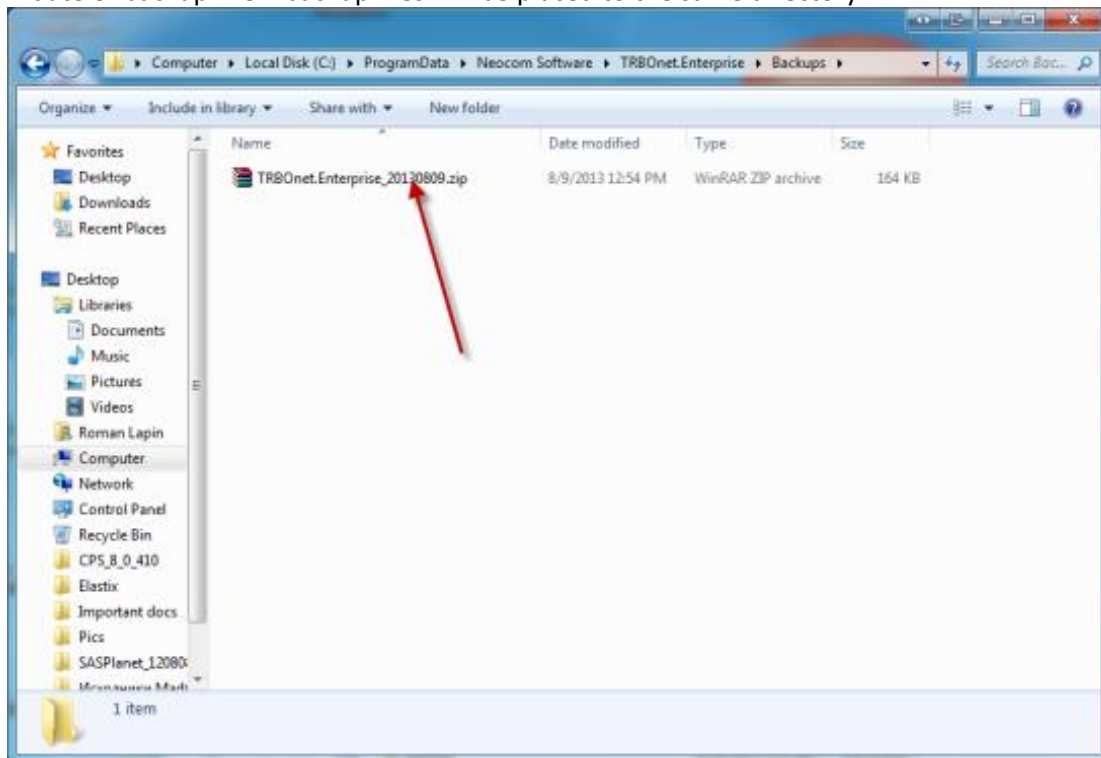
For **TRBOnet.Enterprise**:

- Default directory: **%ProgramData%\Neocom Software\TRBOnet.Enterprise\Audio** for Audio files and **%ProgramData%\Neocom Software\TRBOnet.Enterprise\Backups** for backup files;
- Custom directory specified in TRBOnet RadioServer settings.

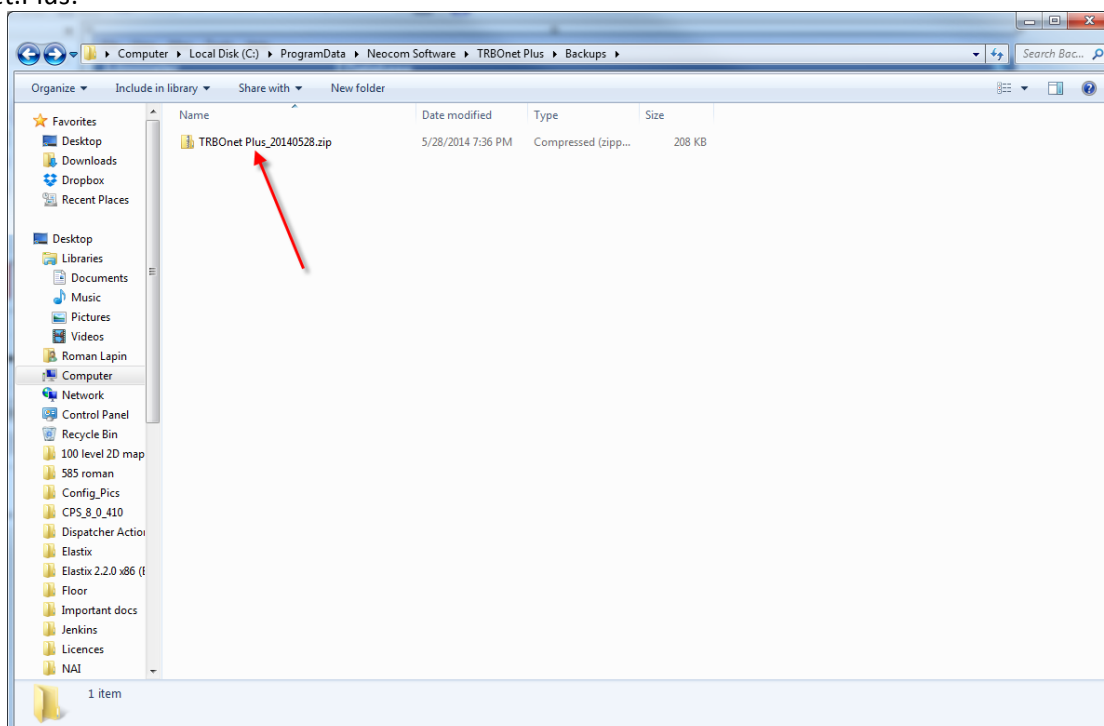
For **TRBOnet.Plus**:

- Default directory: **%ProgramData%\Neocom Software\TRBOnet.Plus\Audio** for Audio files and **%ProgramData%\Neocom Software\TRBOnet.Plus\Backups** for backup files;
- Custom directory specified in TRBOnet RadioServer settings.

5. The archive includes database backup file and audio recordings files. The archive name contains the date of backup. New backup files will be placed to the same directory.



For TRBOnet.Plus:



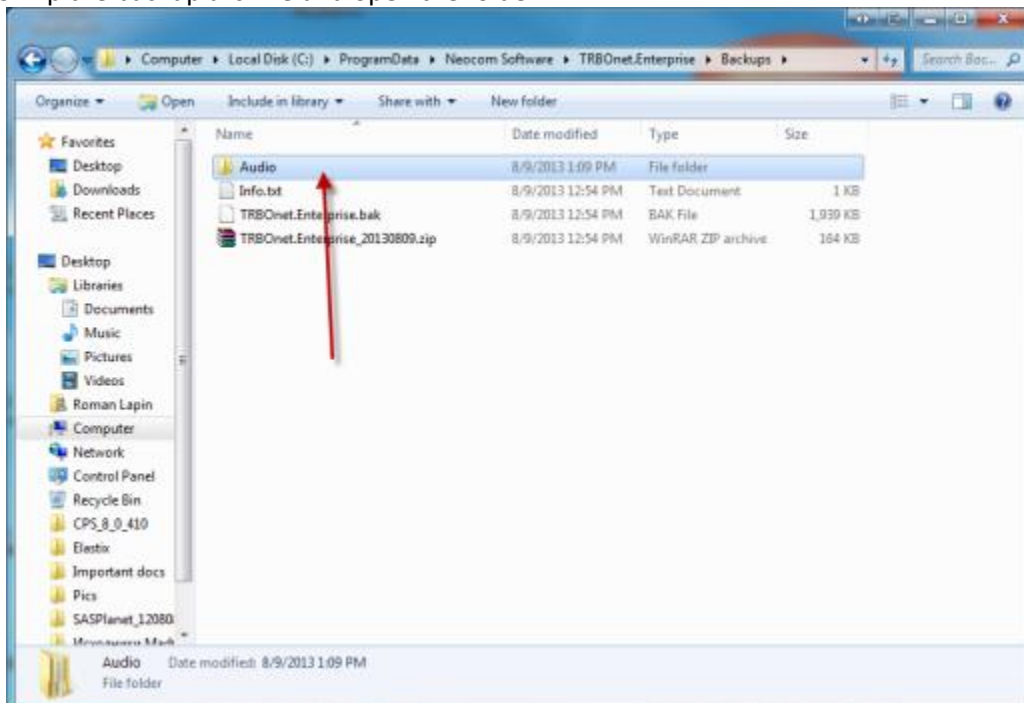
Restore Database

To restore the database do the following:

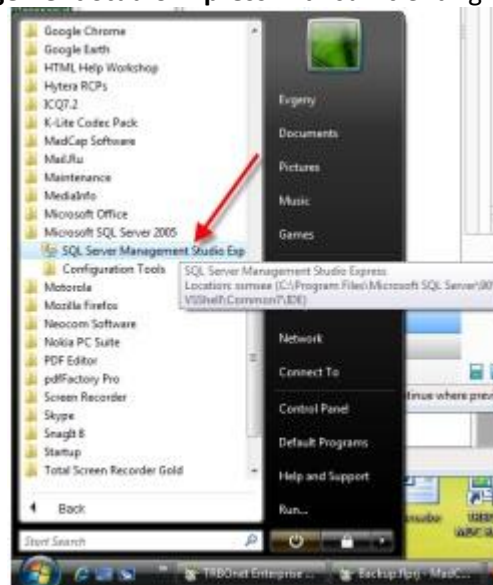
1. Open TRBOnet RadioServer Configurator and stop TRBOnet RadioServer.



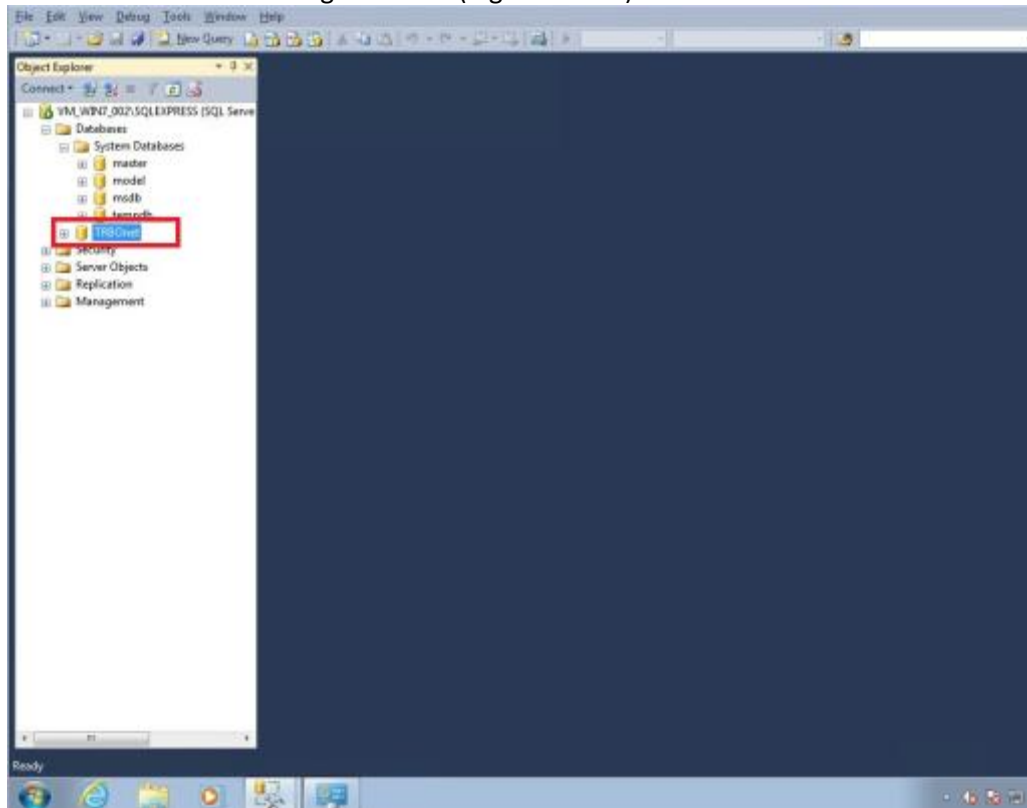
2. Unzip the backup archive and open the folder:



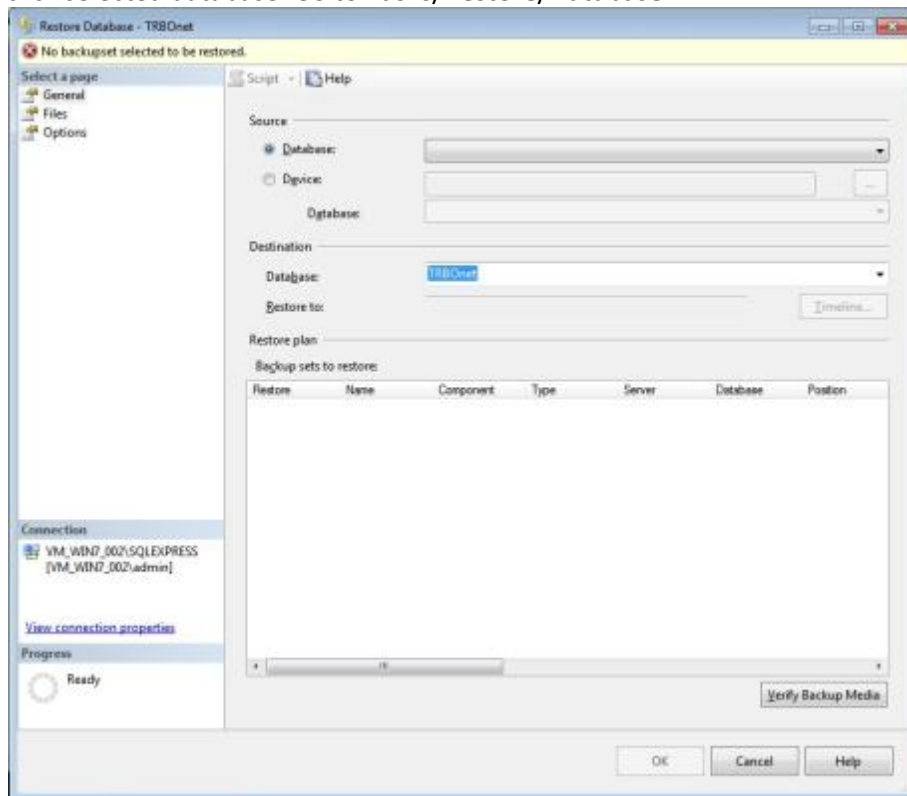
- Run **SQL Server Management Studio Express** with sufficient rights to manage databases.




- Select **Database** in the navigation tree (e.g. **TRBOnet**):

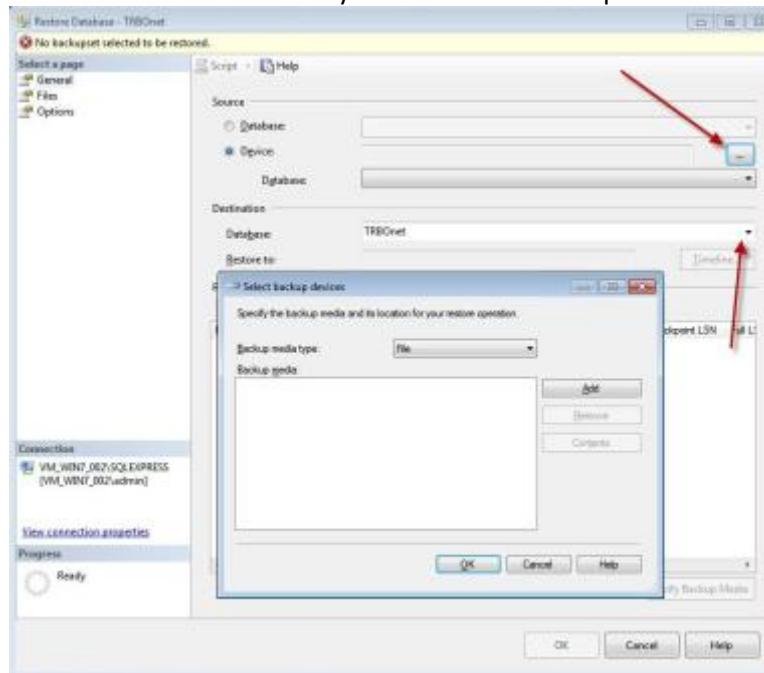



5. Right-click selected database. Go to **Tasks/Restore/Database**:

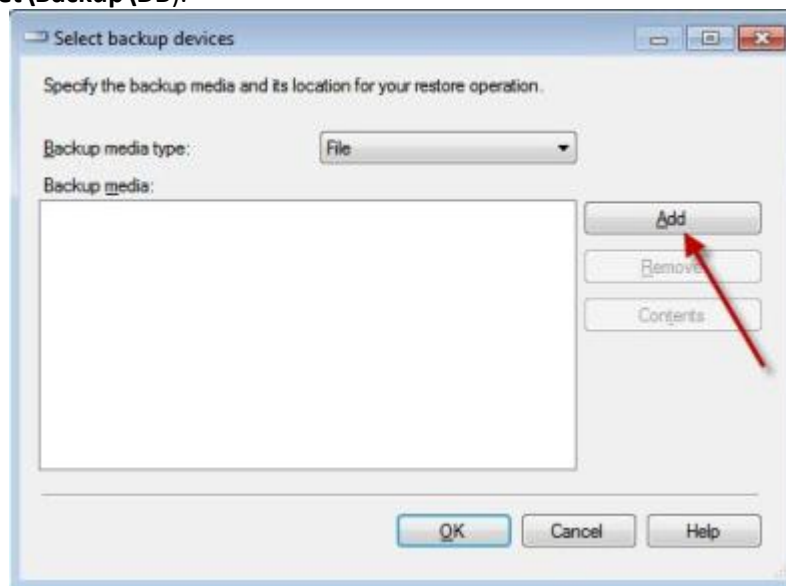


6. Select Database backup properties:
- In the **Destination** field type in or select **Database** name to backup to in the dropdown menu (e.g. **TRBOnet**);
 - In the **Source** field check **Device**;

- Click  button to select the directory with database backup:

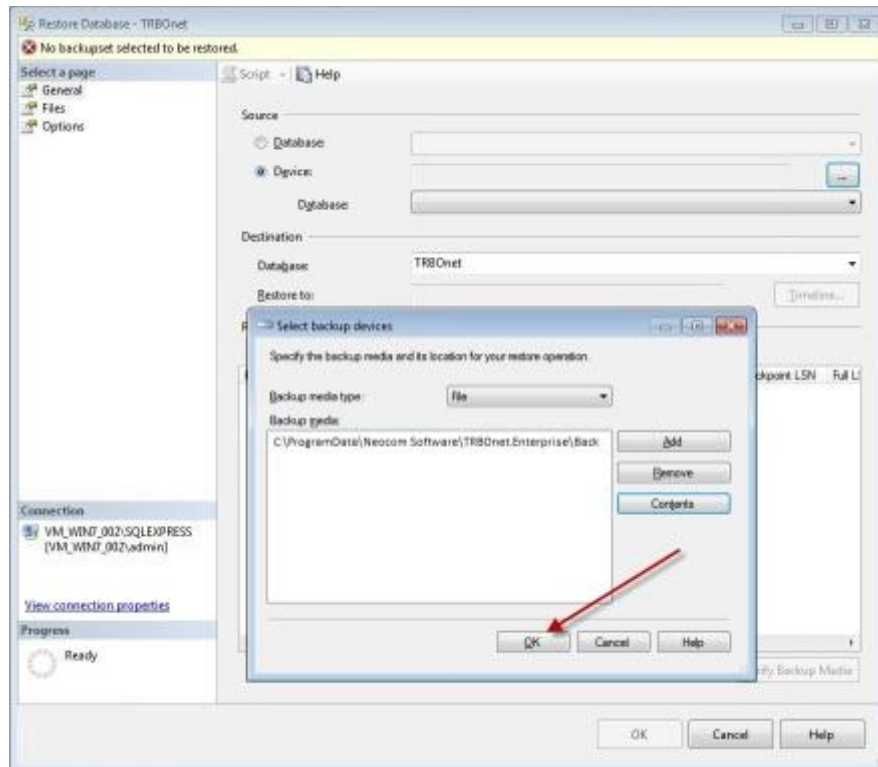


- Click  button and select the directory you unarchived the database backup to (e.g., C:\TRBOnet\Backup\DB).



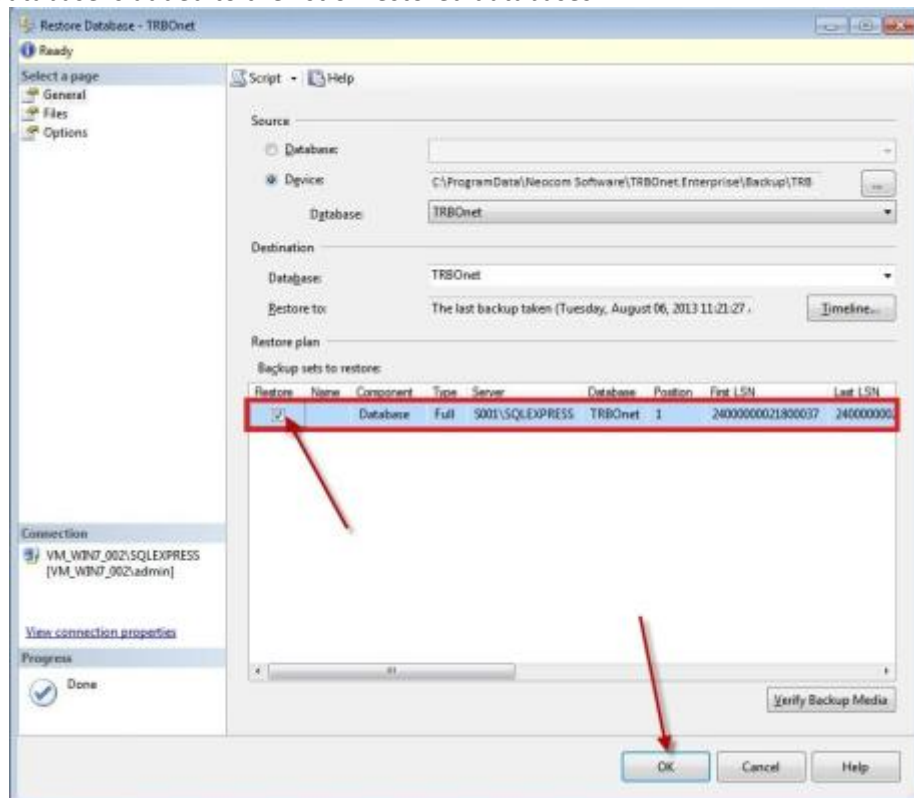
Note: Select file type - **.bak**.

Click «**OK**» to add the directory.



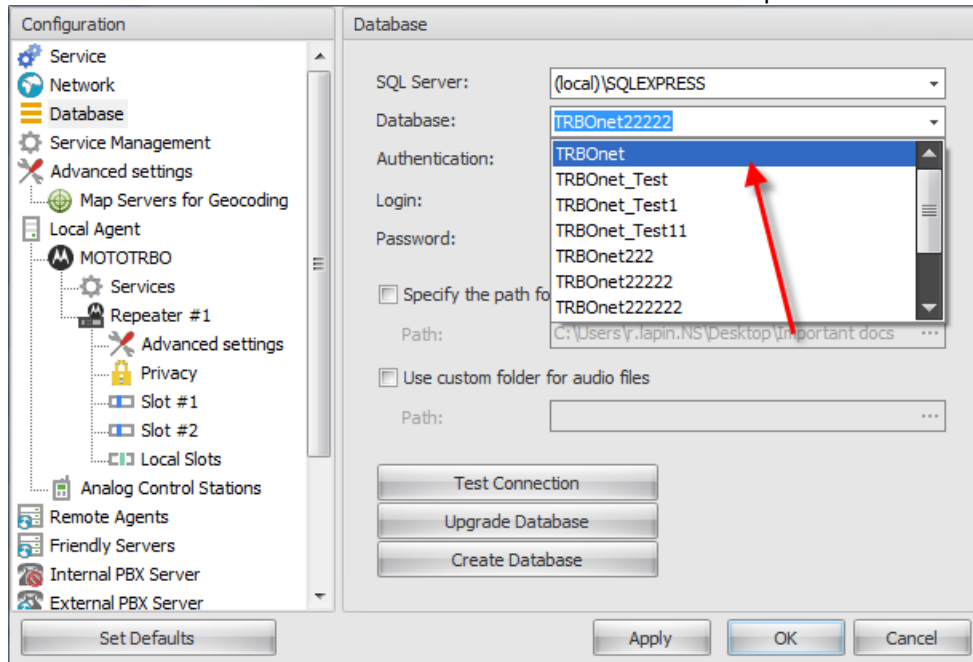
Click «OK».

8. The database is added to the list of restored databases




Select the check box and click «OK» to restore the database.

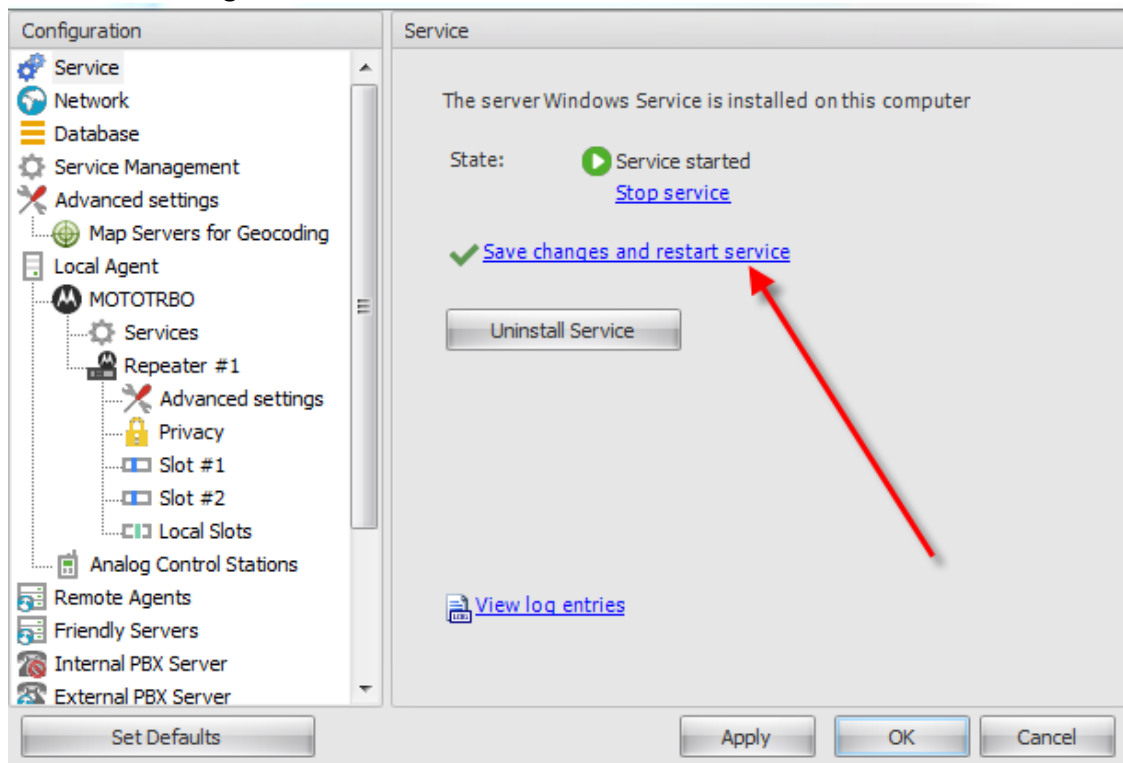
9. Go to **Database** section. Select the restored database from the dropdown list.



Click  button to check the connection to Database.

Click  button to upgrade the database if current database was restored from the database version lower than current.

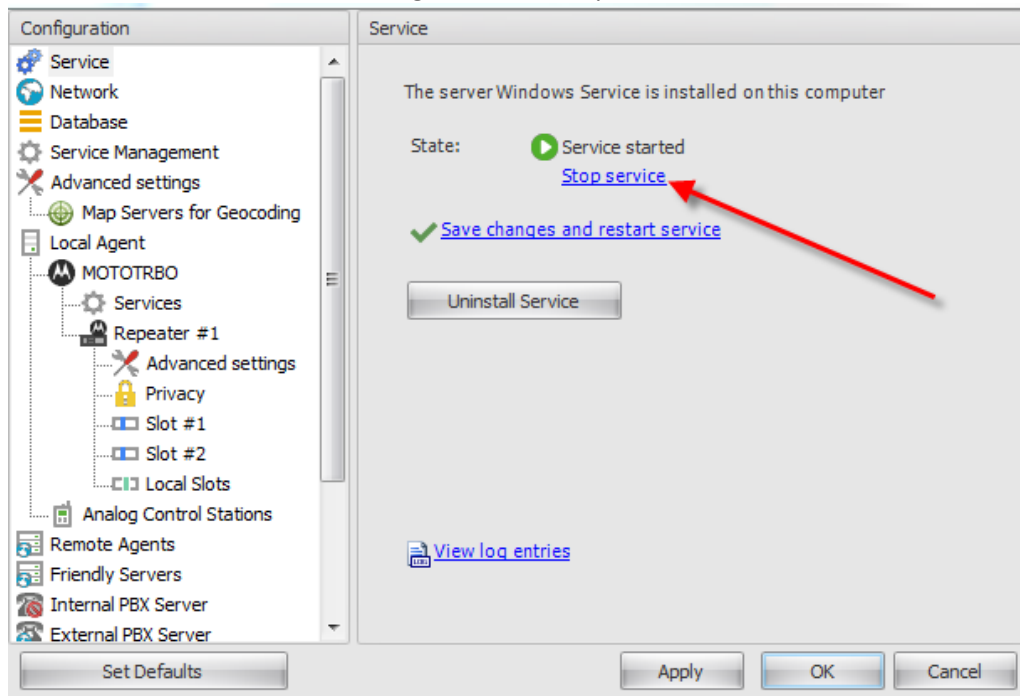
10. Hit «**Save changes and restart service**» link.



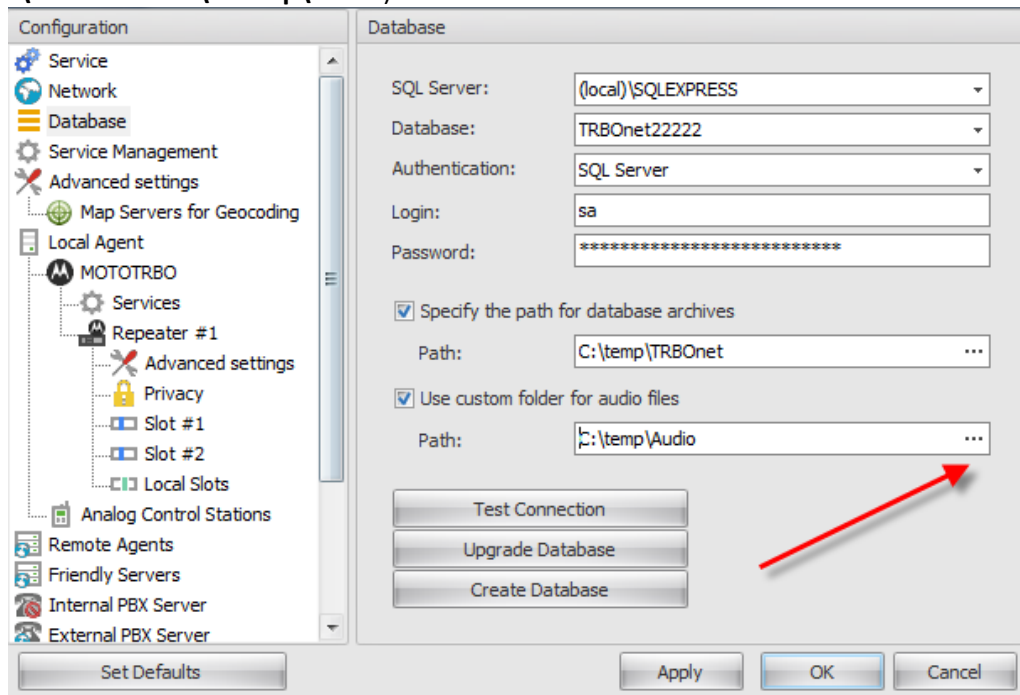
Restore Audio Recordings

To restore the audio files do the following:

1. Launch TRBOnet RadioServer Configurator and stop TRBOnet RadioServer.

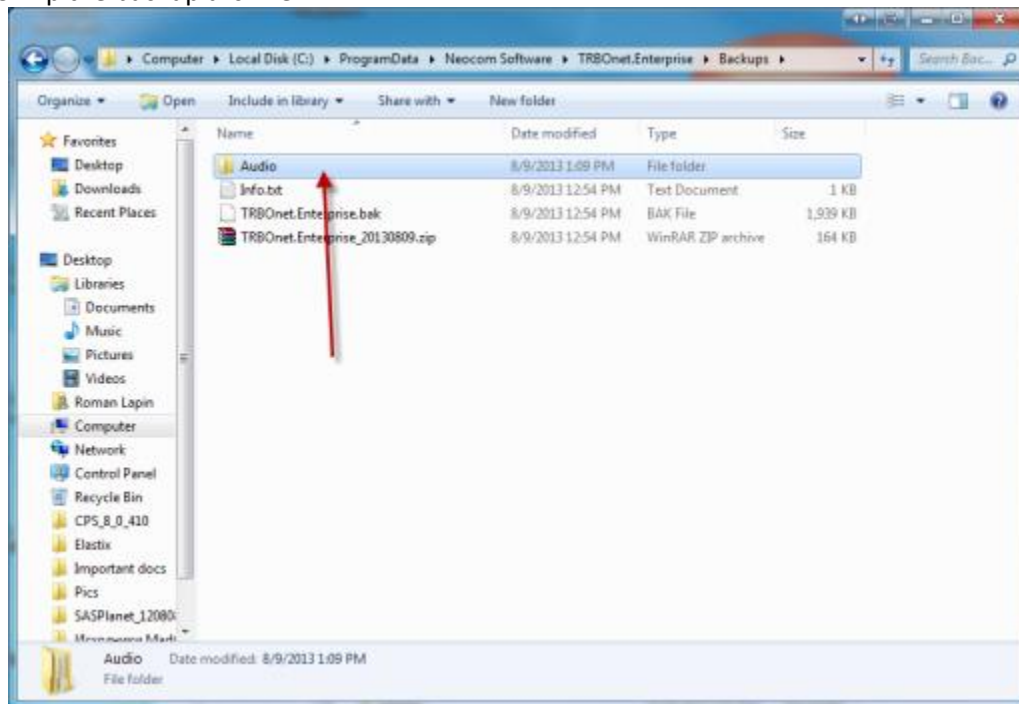


2. Go to **Database** section in the navigation tree and specify custom directory for audio files (e.g. for TRBOnet.Enterprise **C:\TRBOnet.Enterprise\Backup\Audio**; For TRBOnet.Plus: **C:\TRBOnet.Plus\Backup\Audio**).

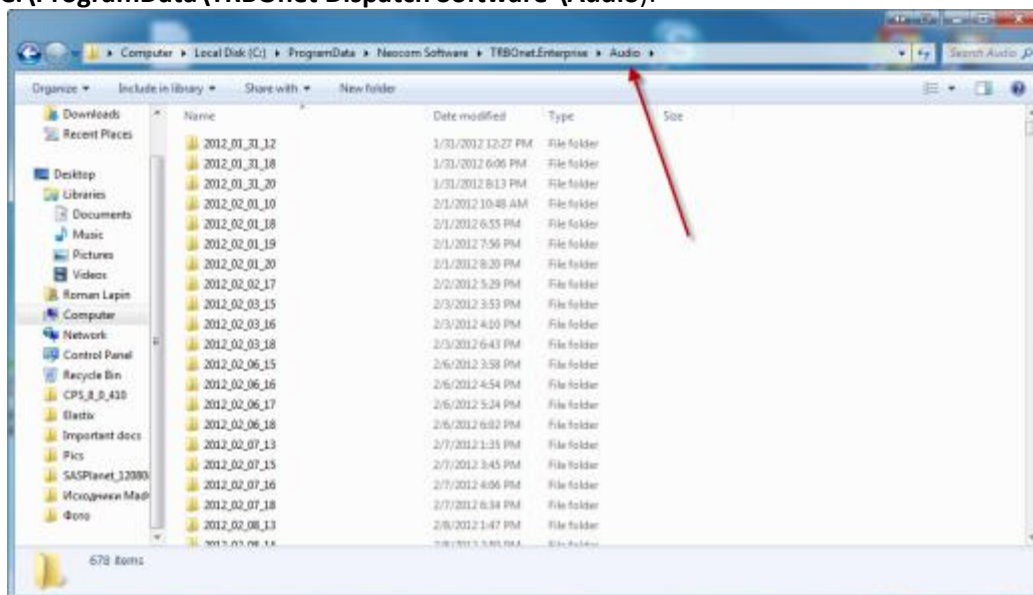


3. Go to the directory you specified to store backup audio files.

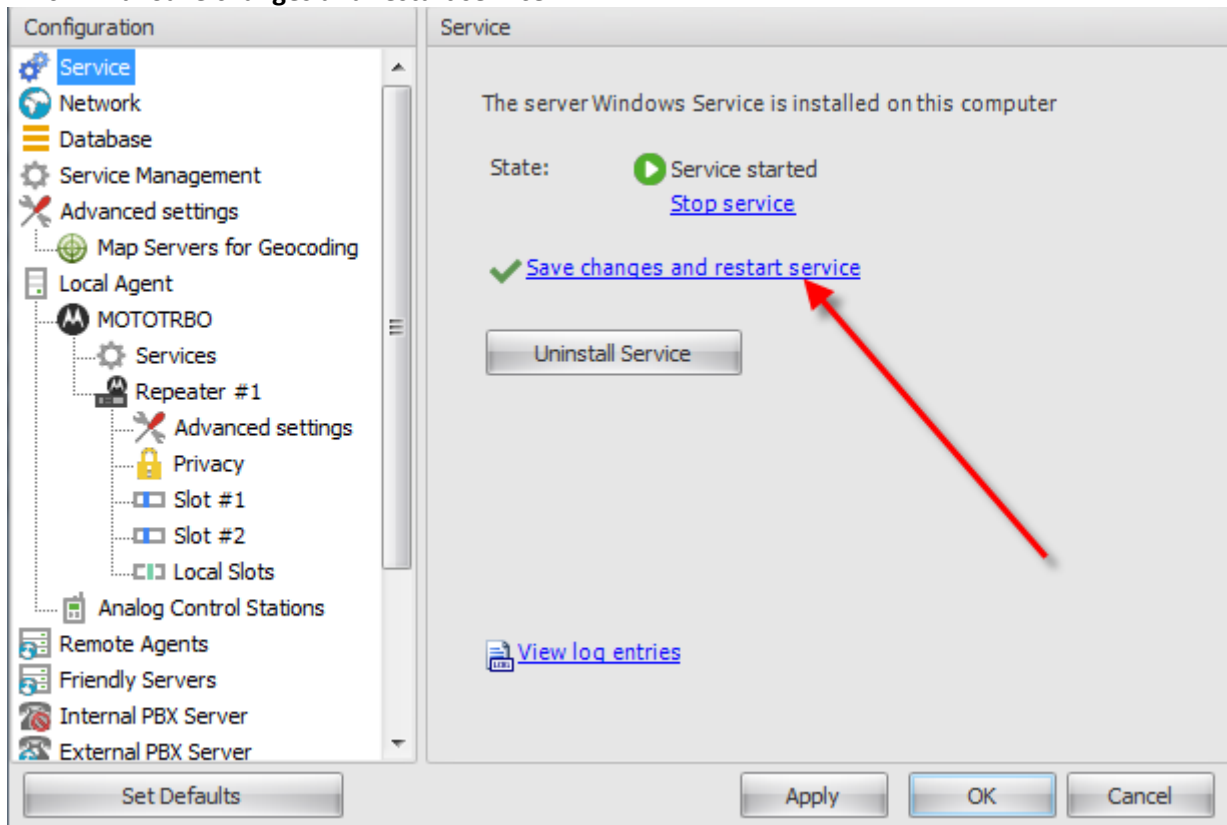
4. Unzip the backup archive:



5. Copy unarchived audio files to the folder specified in TRBOnet RadioServersettings (e.g., C:\ProgramData\TRBOnet Dispatch Software \Audio):



6. Hit «Save changes and restart service» link.

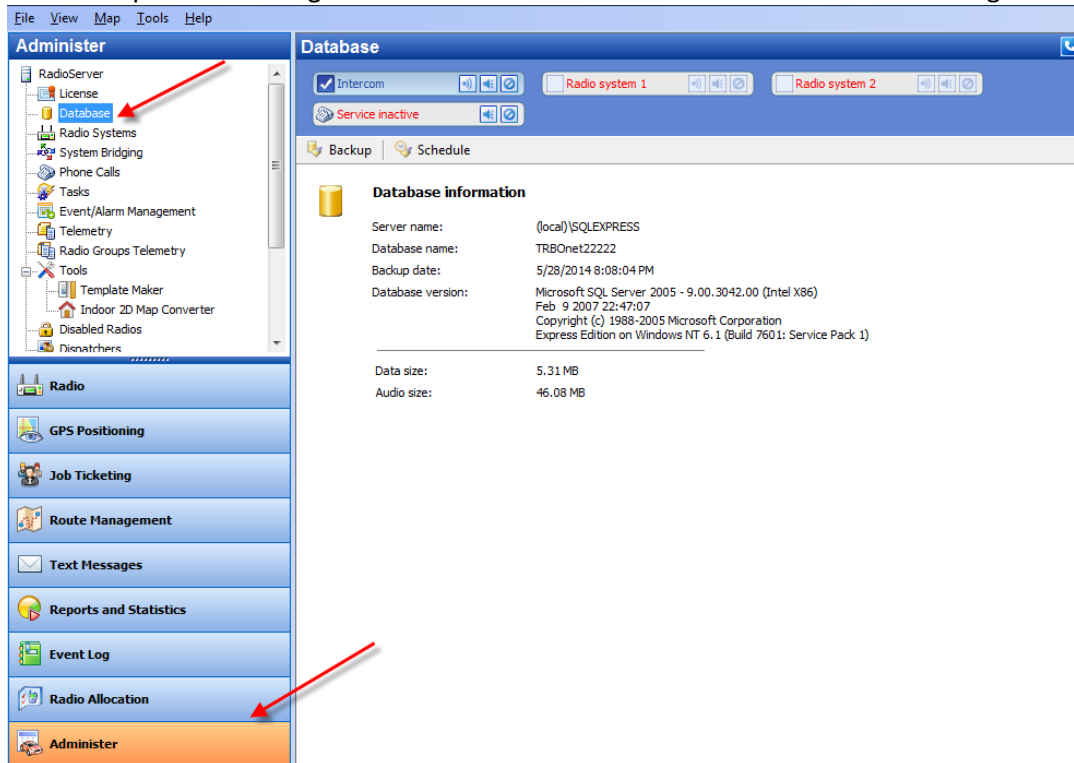


Audio files are restored.

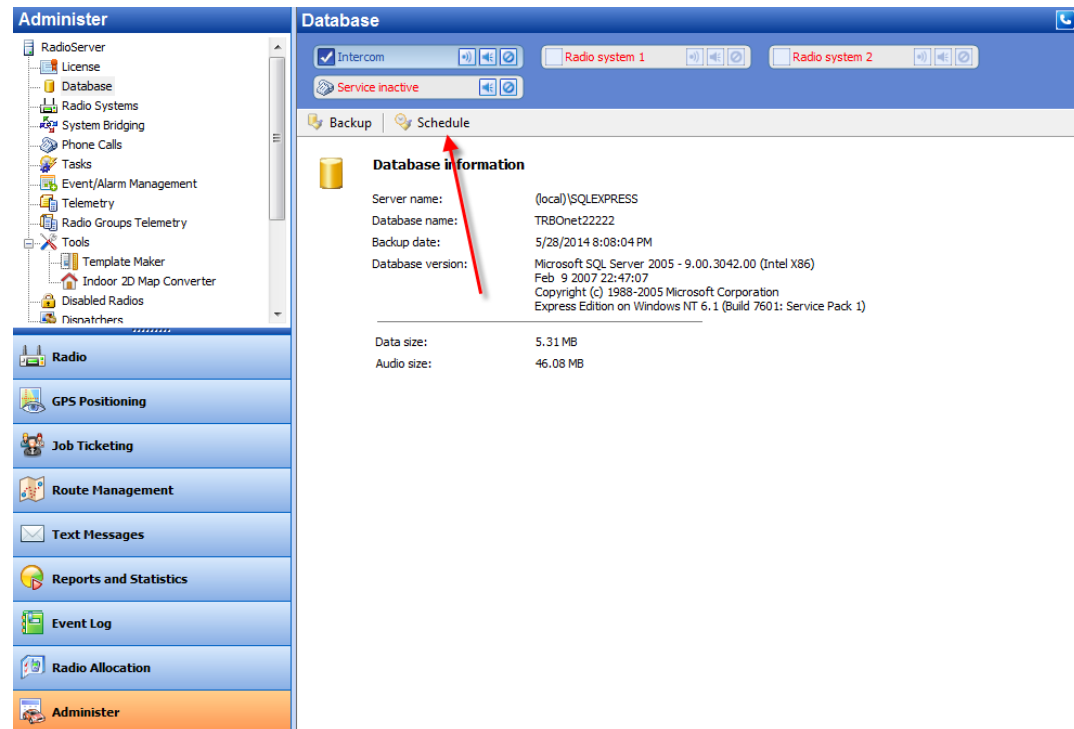
Schedule Backups

To set schedule backup for the database and audio recordings do the following:

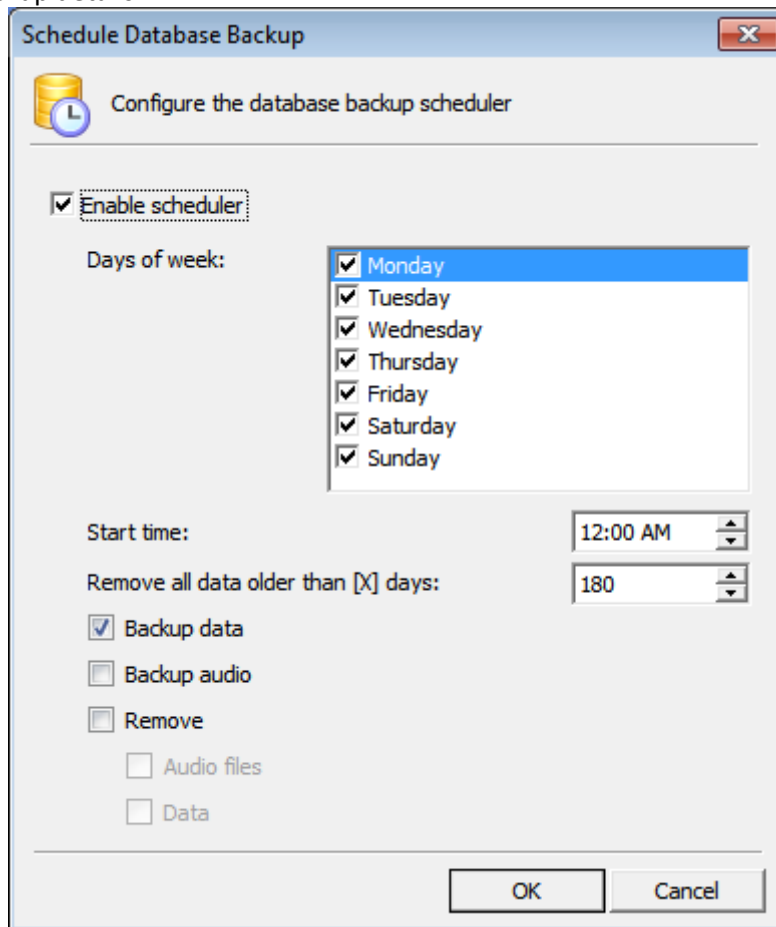
1. In the Dispatch Console go to **Administer** section and select **Database** in the Navigation tree:



2. Click «Schedule» button:



3. Specify Backup details:



- **Enable the database backup scheduler** - check to enable the database backup scheduler;
- **Days of week** - check days of week to back up the database;
- **Start time** - select start time for database backup;
- **Remove all data older than [X] days** - select number of days to remove all data;
- **Backup audio** - check to backup audio recordings;
- **Remove** - check to remove audio files and data from database). Remove all data older than date - select the date;
- **Audio Files** -check to remove audio files;
- **Data** - check to remove data.

Click «OK» to run backup procedure.

Appendix E: Swift.Tracker Option Board Configuration

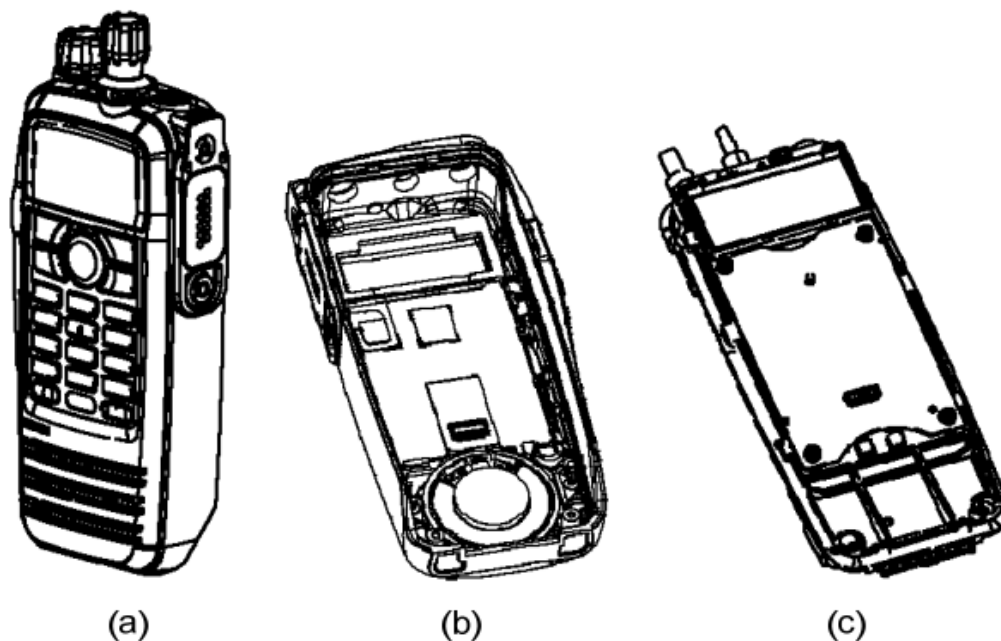
TRBOnet Swift.Tracker solution based on MOTOTRBO Generic Option Board (GOB) and does not require any proprietary hardware. To enable this feature you only need to use a radio with Generic Option Board.

In the MOTOTRBO™ portable radio, a standard option board is factory-installed to the radio. Generic Option Board replaces this standard option board and provides specific functionality.

The standard option board is found below the LCD display for the Display version or below the speaker for the Non-Display version of the radio.

The standard option board is replaced with GOB by removing four screws. It is recommended that the removed screws are not used for another installation.

GOB replacement is completed by installing four new screws into the designated holes:



- a - Portable radio view;
- b - Enclosure view;
- c - Option Board position in the Motorola Portable radio.

Note: for further assistance on the installation sequences, please refer to Motorola documentation.

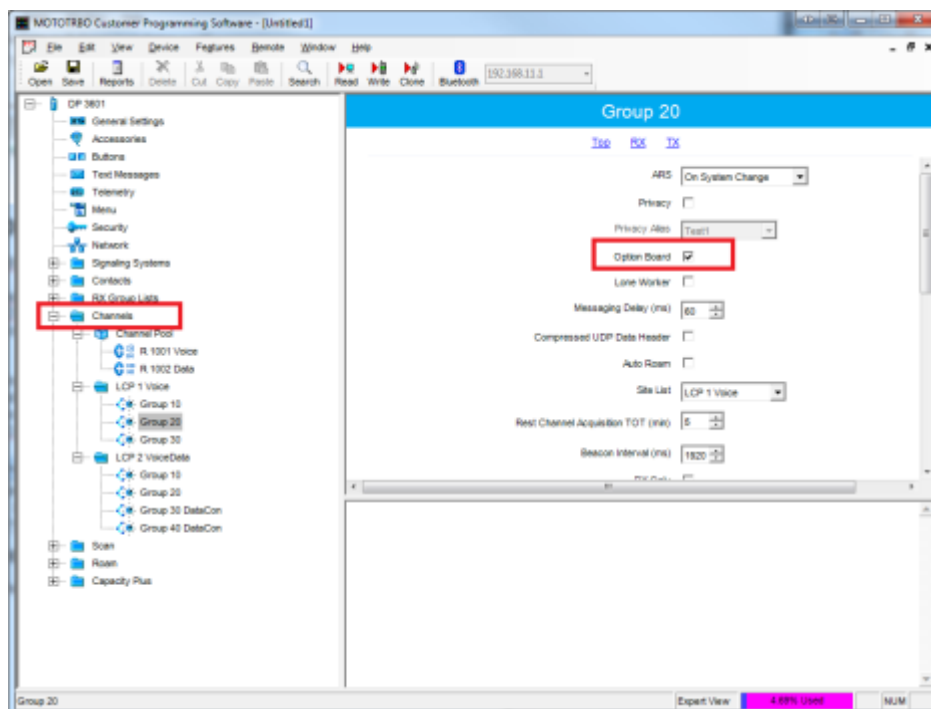
Option Board Support in Radio's Code plug

1. To install MOTOTRBO CPS:
 - Go to **Motorola** website.
 - Download **MOTOTRBO CPS** software.
 - After download completes, run the package and follow the prompts to complete the installation.
2. Connect programming cable to Portable radio.
3. Connect Portable radio to your PC.
4. Check Portable radio and PC power connection.
5. Launch MOTOTRBO CPS
6. Select Read button:



Note: Select **View** , **Expert** in MOTOTRBO CPS main menu.

7. Go to **Channels** in the Navigation Tree:



- Select channel with GOB support.
- Check the Option Board box.



8. Select **Write** to write the data;
9. Disconnect Radio from your PC.

Add TRBOnet Firmware in MOTOTRBO GOB Loader

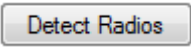
To use Swift.Tracker with a radio TRBOnet firmware should be uploaded to GOB as regular firmware.

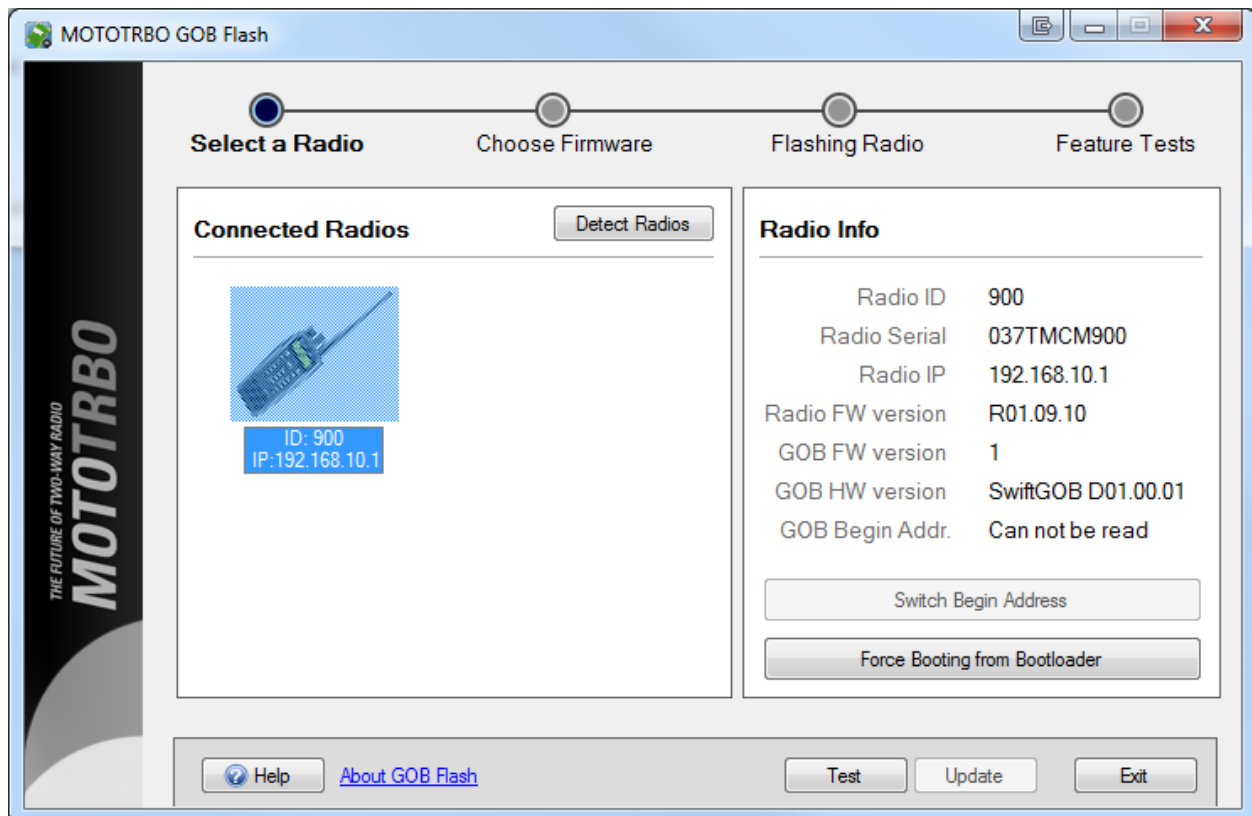
1. Install **MOTOTRBO GOB FLASH**

Go to <http://trbonet.com/download/> to download TRBOnet.Swift Software for Generic Option Board with Documentation. The archive has the latest firmware and MOTOTRBO GOB FLASH utility.

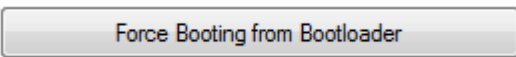
2. Connect programming cable to Portable radio.
3. Connect Portable radio to your PC.
4. Check Portable radio and PC power connection.
5. Select channel with GOB support on your MOTOTRBO Portable radio.
6. Launch **MOTOTRBO GOB FLASH**.

Note: Portable radio position for ManDown is set when programming for the first time. Select appropriate Portable radio position before programming!

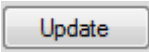
7. Select  :

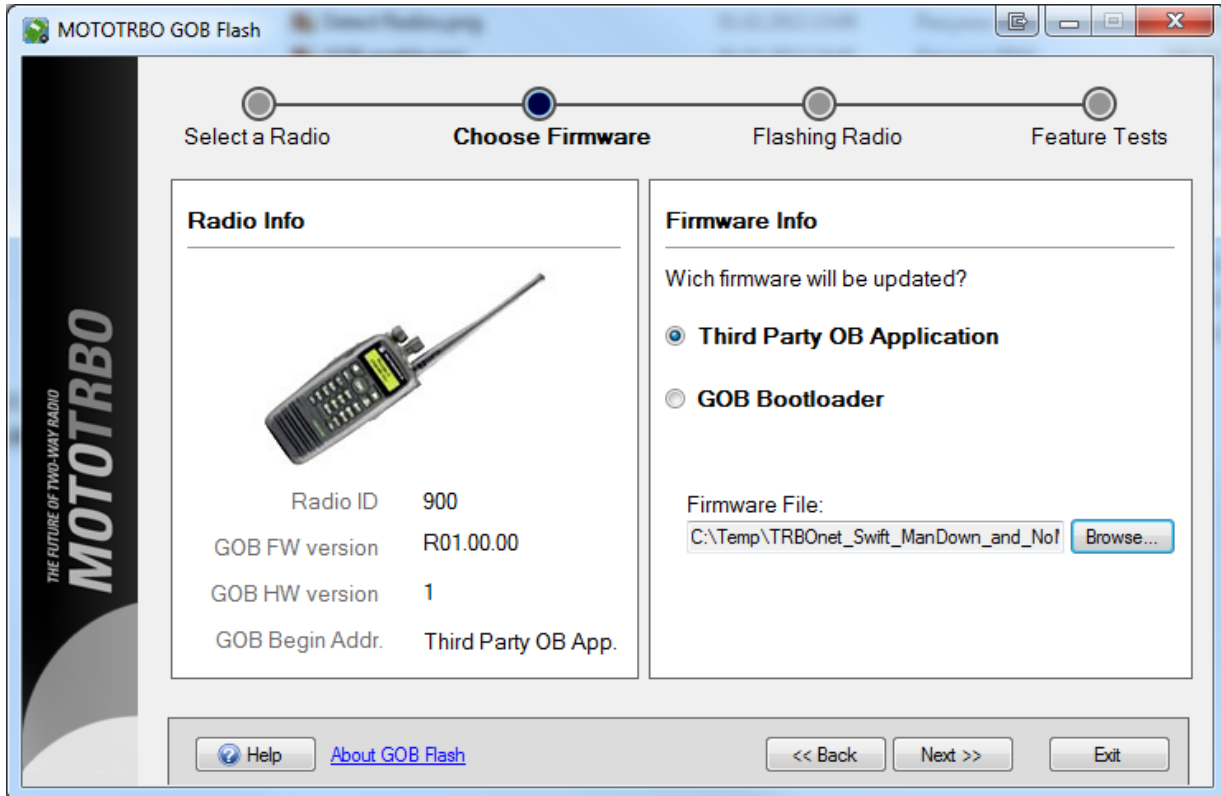


Your Radio is detected.


8. Click your Portable Radio image in the list of connected radios.
9. Select 

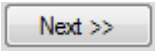
Note: Check **GOB Bootloader** indication on your Portable radio display.

10. Select your Portable Radio in the list of connected radios. Click  button to choose the firmware.
11. Select firmware to update:

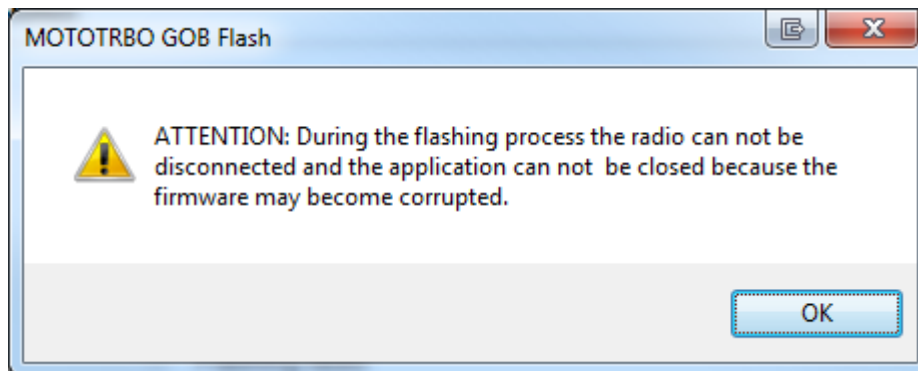


Select **Third Party GOB Application**;

Click  button to select Firmware File (C:\Temp\ManDown File for ex.). File format: .HEX
 Select Firmware File. Click «OK».

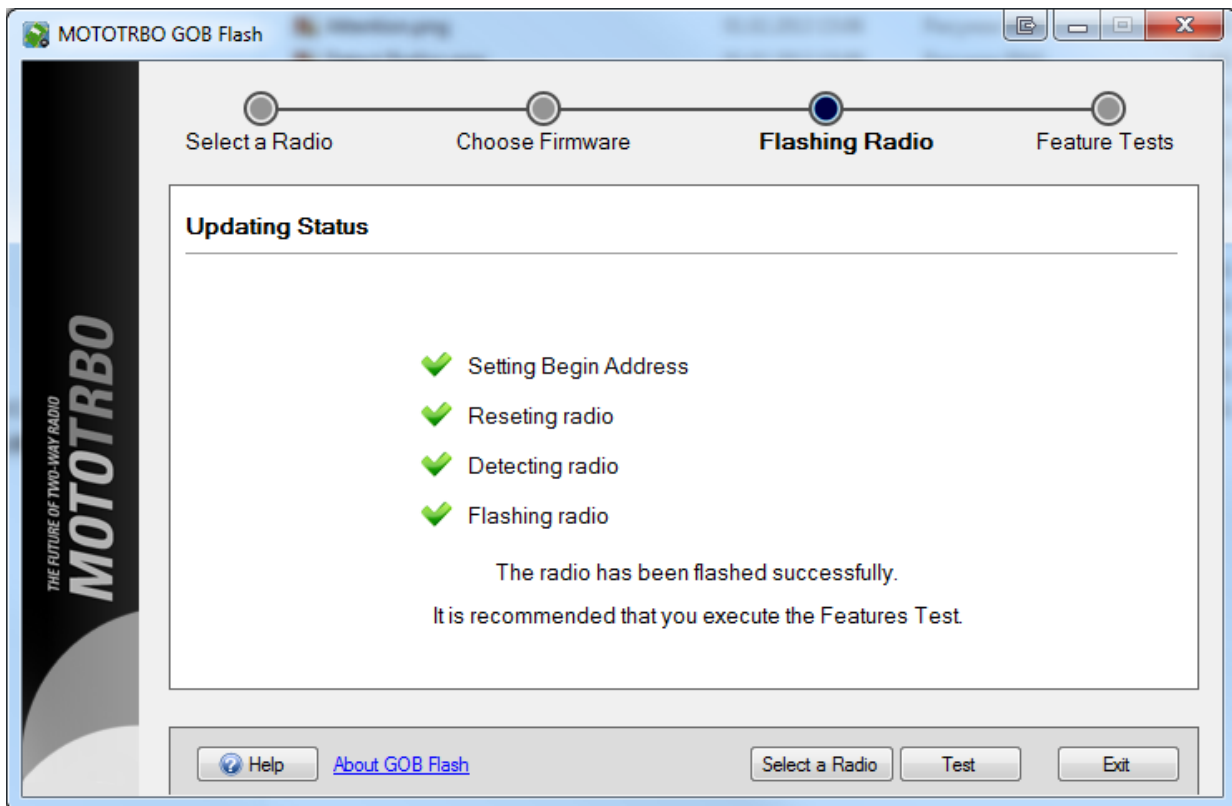
12. Click  button to continue.
13. Wait for Flashing Radio process finish.

The following message appears:



Do not disconnect the radio. Click «OK» to continue.

14. The Portable radio flashes successfully:

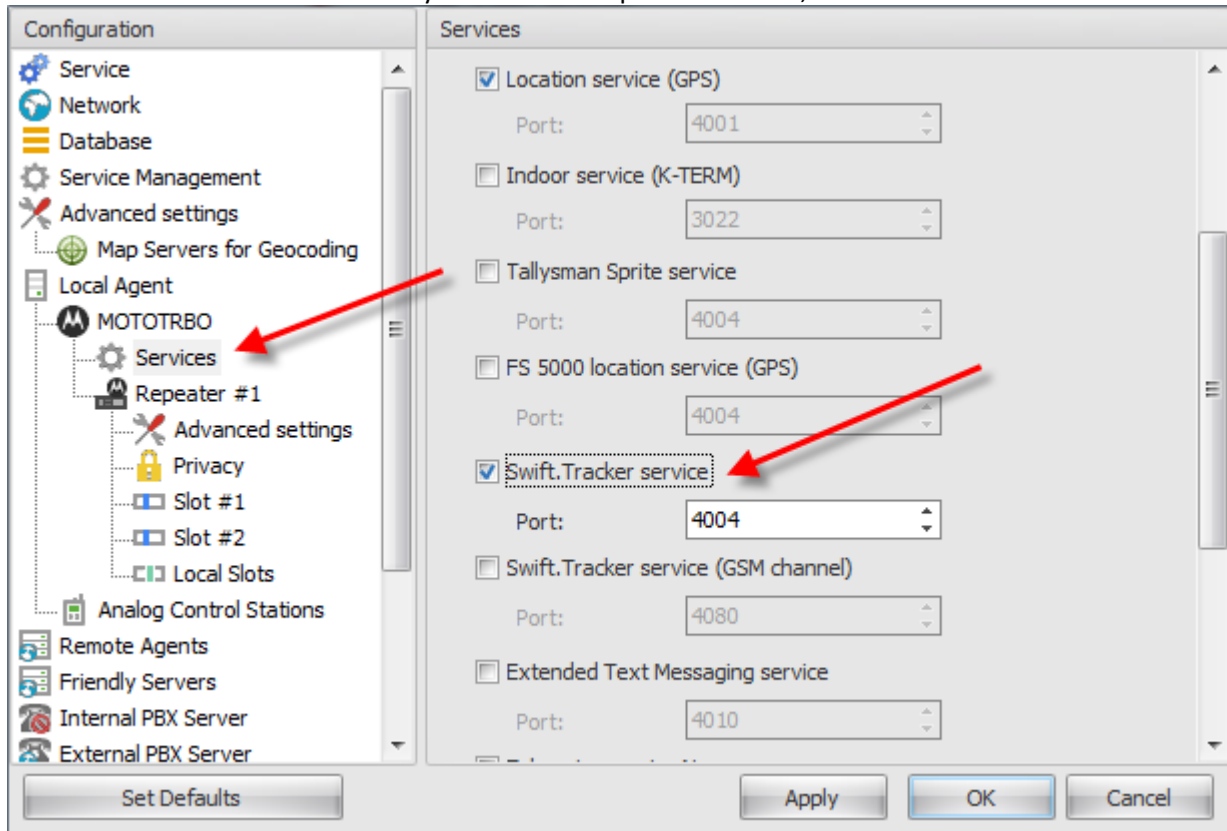


Feature Test execution is recommended for Motorola Samples only.

15. Exit MOTOTRBO GOB FLASH.

Enable Swift.Tracker in TRBOnet RadioServer

To enable Swift.Tracker functionality in TRBOnet Dispatch Software, enable **Swift.Tracker service**:



Click «OK» to save the settings.

- Go to **Service** node, hit **Save changes and restart service** link.

Go to **Service** node, hit **Save changes and restart service** link.

- Launch TRBOnet Dispatch Console using shortcut on your desktop or Start menu.
- Log in as **Administrator**.
- Go to **Administer / Tools / Swift Configuration tool** and configure GOB parameters according to prompts in [Tools](#) chapter.

Appendix F: SIP Setup for Motorola Phone System

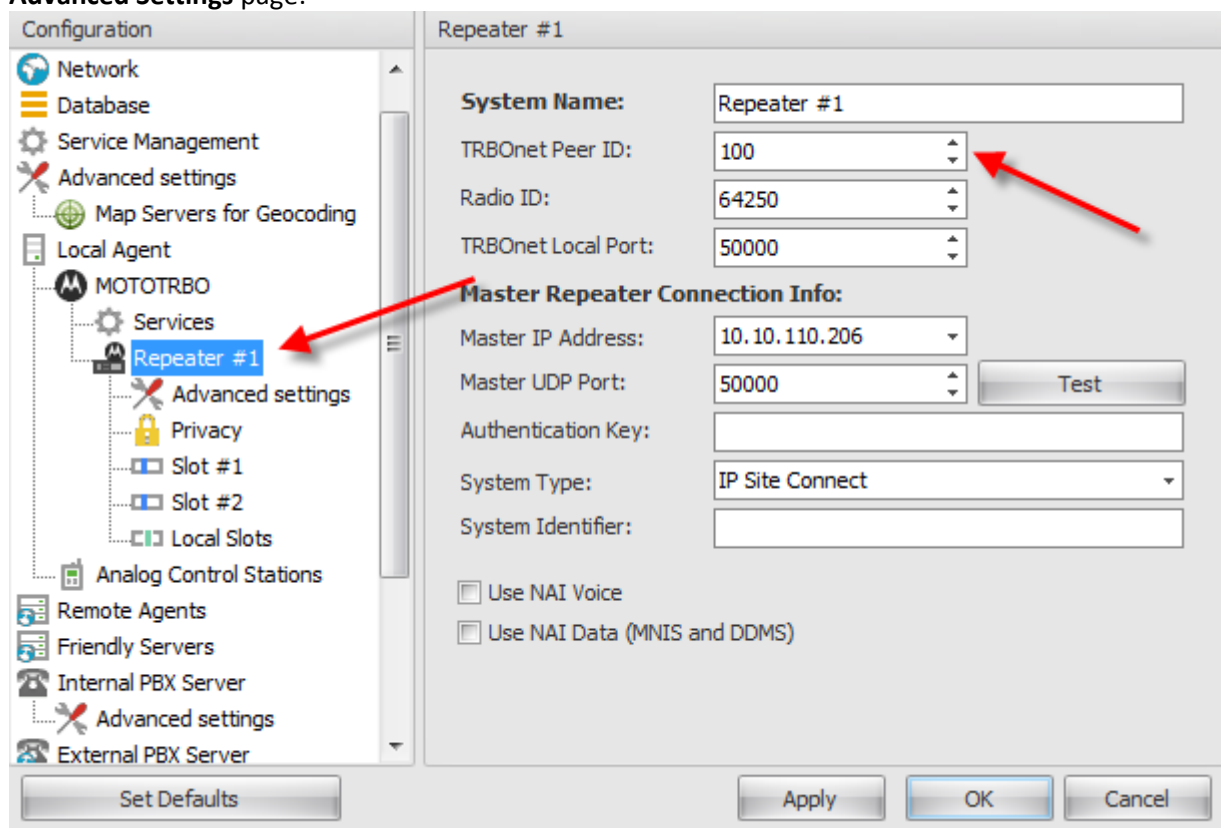
The native MOTOTRBO phone system is supported in case of direct IP connection to repeater. Mototrbo Phone system recommended for IP Site Connect mode.

Note: no extra license per repeater required for Digital Phone Patch from Motorola.

TRBOnet RadioServer Configuration

TRBOnet RadioServer requires specific set up for repeater in IP Site Connect mode as well as for SIP in order to make phone system work properly.

Open TRBOnet RadioServer Configurator using shortcut on your desktop and go to **SIP Interconnect / Advanced Settings** page:



Configuration

- Network
- Database
- Service Management
- Advanced settings
- Map Servers for Geocoding
- Local Agent
 - MOTOTRBO
 - Services
 - Repeater #1** (selected)
 - Advanced settings
 - Privacy
 - Slot #1
 - Slot #2
 - Local Slots
- Analog Control Stations
- Remote Agents
- Friendly Servers
- Internal PBX Server
 - Advanced settings
- External PBX Server

Repeater #1

System Name: Repeater #1

TRBOnet Peer ID: 100

Radio ID: 64250

TRBOnet Local Port: 50000

Master Repeater Connection Info:

Master IP Address: 10.10.110.206

Master UDP Port: 50000

Authentication Key:

System Type: IP Site Connect

System Identifier:

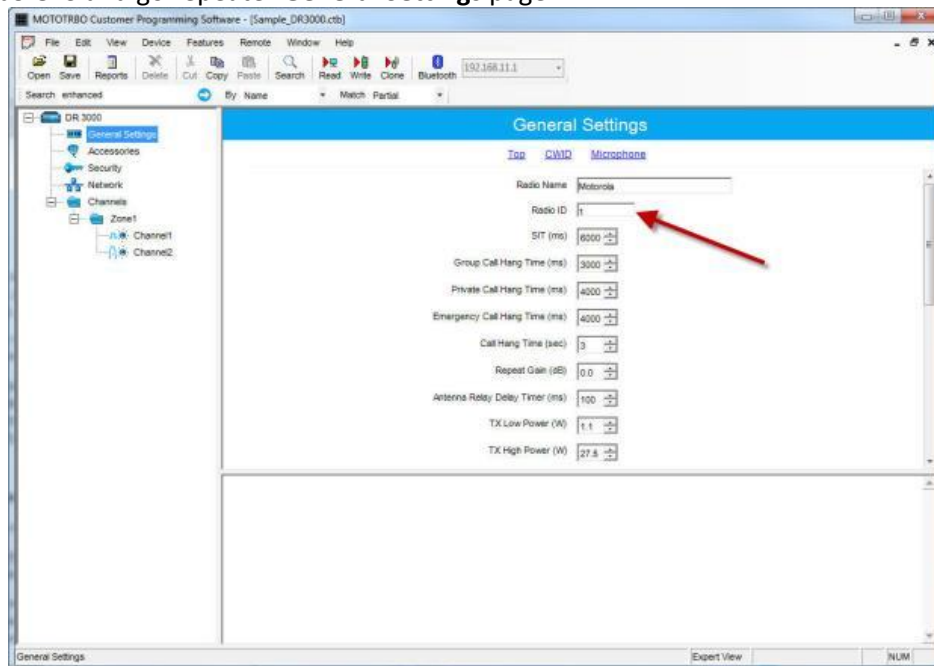
☐ Use NAI Voice

☐ Use NAI Data (MNIS and DDMS)

Set DTMF Access Code «0» and DTMF Deaccess Code «#».

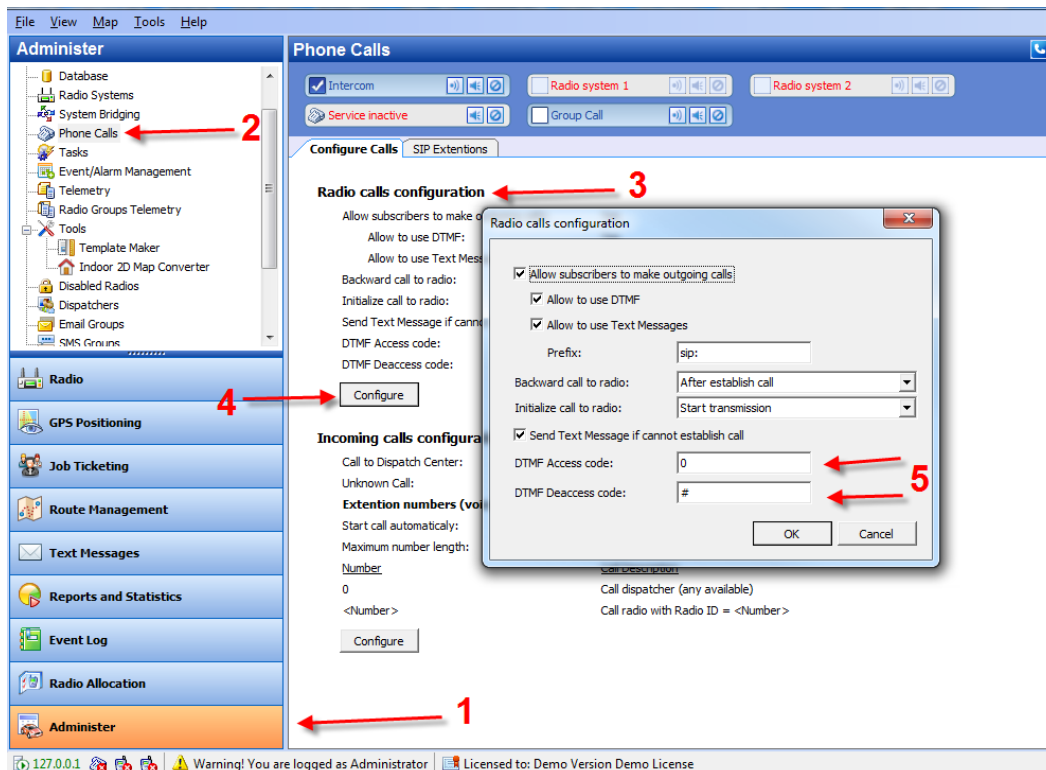
Note: Mototrbo Phone System available for repeaters in IP Site Connect mode. For system based on Control Stations use TRBOnet Phone System.

Launch **Mototrbo CPS** and go repeater **General Settings** page:



The actual repeaters Radio ID in CPS must differ from TRBOnet Dispatch Software Peer ID. TRBOnet Dispatch Software acts as another virtual peer repeater with Peer ID (e.g. IPSC network consists of 1 master and 3 peers. The repeaters IDs (Radio IDs in CPS code plugs for repeaters) would be 1, 2, 3, 4. TRBOnet Dispatch Software peer ID must differ from all repeaters (master and all peers) otherwise a conflict will happen in network as peers have the same ID). TRBOnet Dispatch Software Peer ID is 64250.

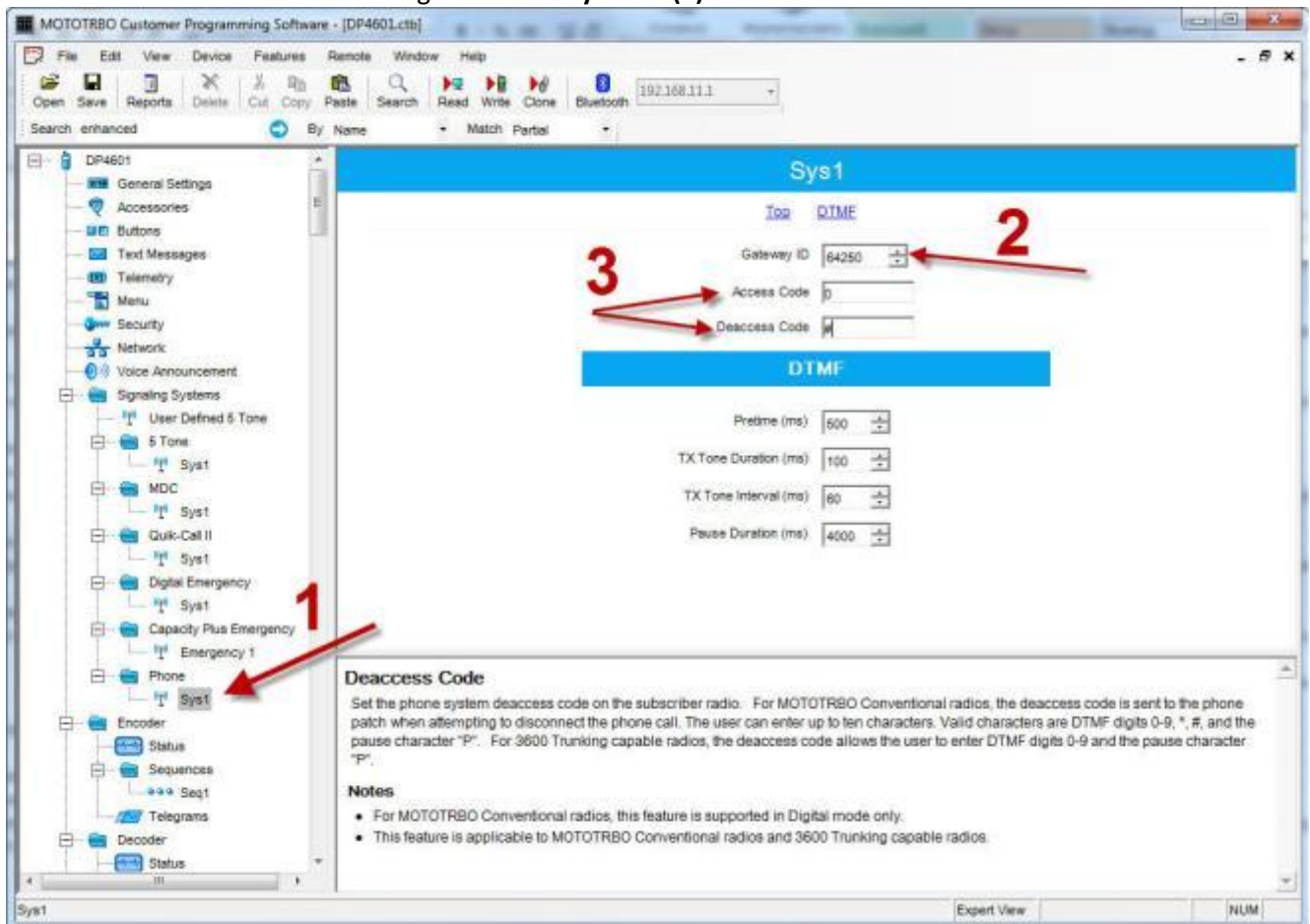
1. Open TRBOnet. Dispatch Console. Go **Administer , Phone Calls , Radio Calls Configuration –**,Configure and set **DTMF Access** and **DTMF Deaccess** codes as 0 and # respectively:



Programming Radios

Special set up is required for radios in MOTOTRBO CPS.

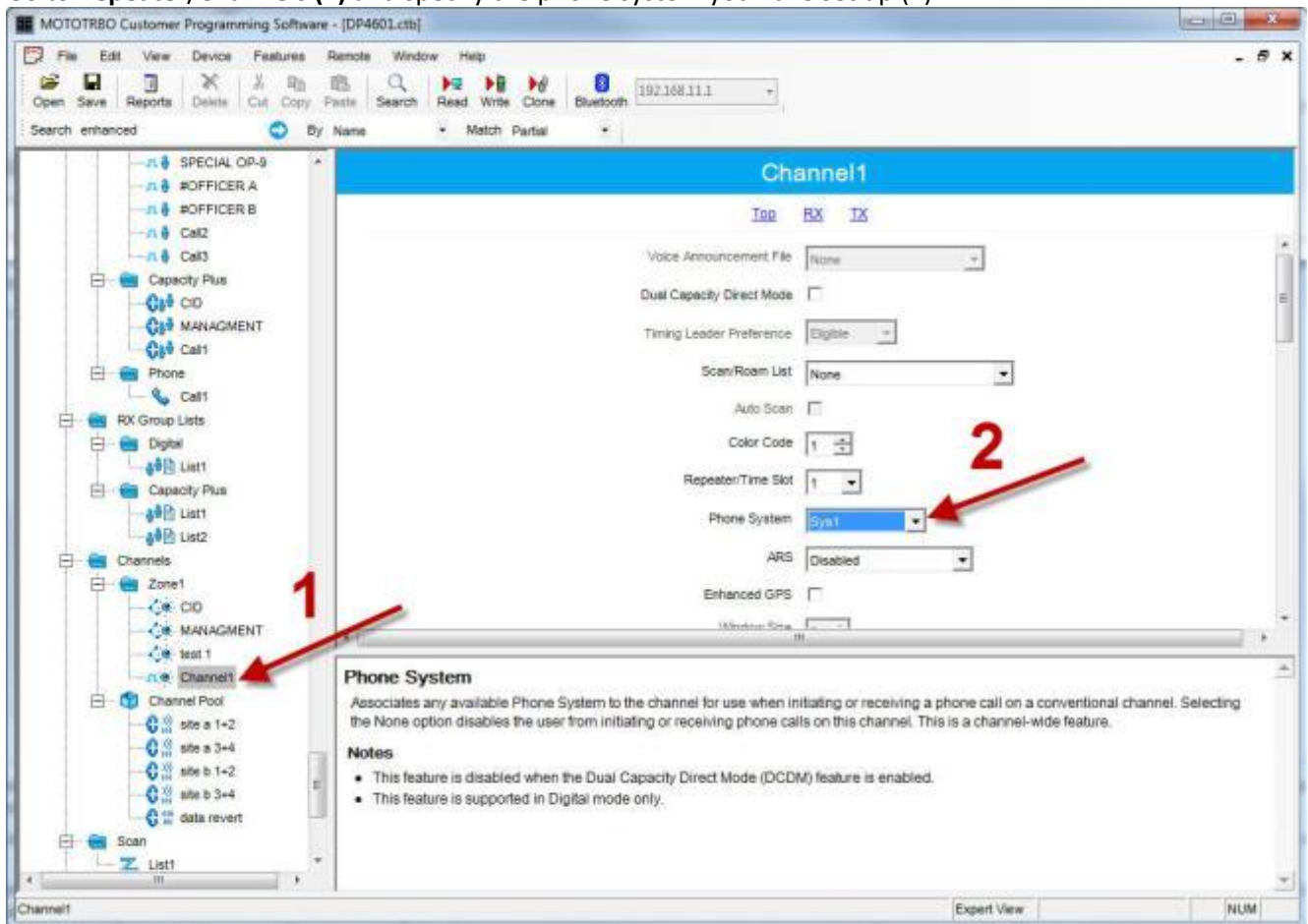
Read a subscriber radio in CPS and go to **Phone Systems (1)**:



Make sure that **Gateway ID (2)** is equal to repeater Slots IDs in TRBOnet RadioServer as well as TRBOnet Dispatch Software Peer ID in TRBOnet RadioServer.

Set DTMF Access Code «0» and DTMF Deaccess Code «#» (3).

Go to **Repeater/Channels (1)** and specify the phone system you have set up (2):



Appendix G: NAI VOICE & DATA Support

TRBOnet Dispatch Software supports MOTOTRBO Network Application Interface (NAI) VOICE and DATA.

NAI protocol allows to operate with MOTOTRBO CapacityPlus and MOTOTRBO Linked CapacityPlus repeaters over IP. (Wireline Dispatch Console).

Voice Repeaters must have NAI VOICE and NAI DATA license activated. Data Revert repeaters must have NAI DATA license activated. A repeater must have 32 Mb memory.

Software Requirements

Server Computer	Dispatch Computer
TRBOnet RadioServersoftware installed	TRBOnet Dispatch Software Dispatch console installed
MOTOTRBO Network Interface Service (MNIS)	
MOTOTRBO Device Discovery and Mobility Service (DDMS)	
MS SQL Server 2005 Express Edition or higher (can be installed on remote server)	

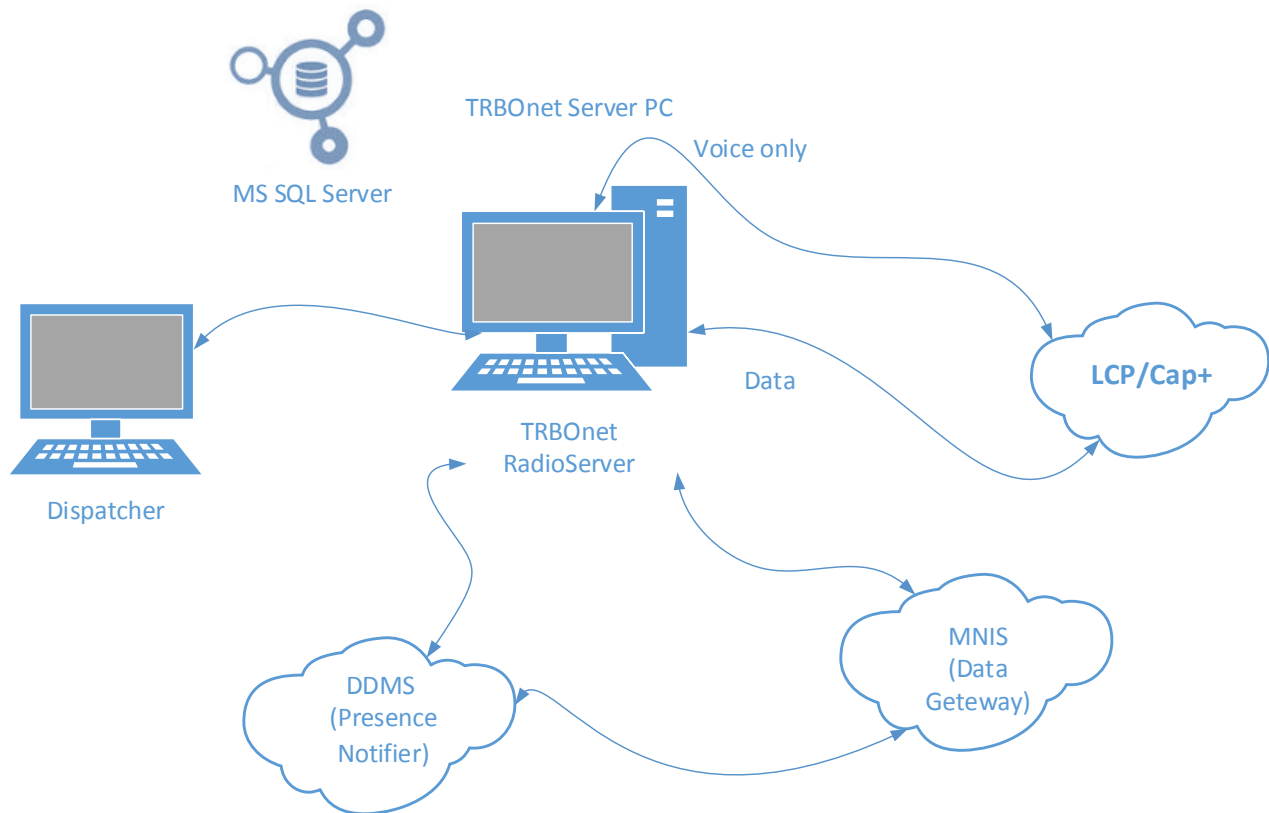
Hardware Requirements

Server Computer		Dispatch Computer
CPU	Intel Core i7 or higher	Intel Core i5 or higher
Memory	3 GB	3 GB
Sound Card	—	Multi-channel Sound Card required. Recommended: 1. M-Audio Delta 1010 LT 2. Roland OCTA CAPTURE Hi-SPEED USB Audio Capture
Supported OS	Windows 7, Windows 8, Windows Server	Windows 7, Windows Server
Additional devices	—	Microphone and speaker (headset)

Note: It is possible to use a virtual machine as Server Computer.

Voice and Data Flow 1

TRBOnet Dispatch Software Voice and Data flow for NAI is represented on the following scheme:



Voice and Data Flow 2

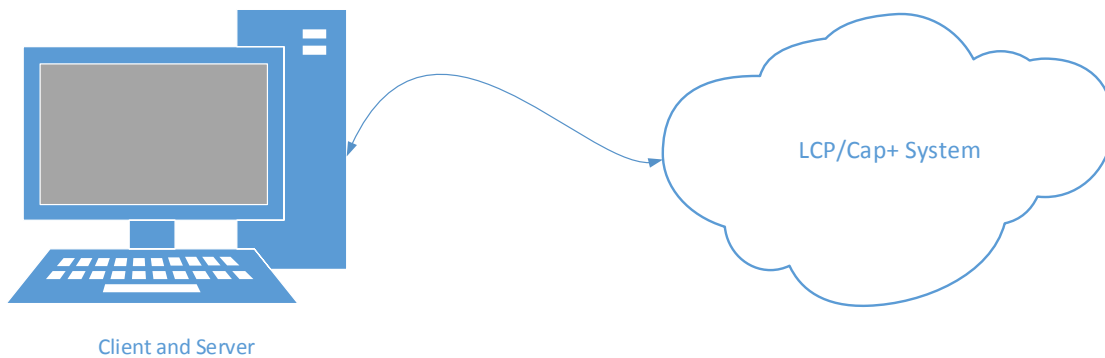
MNIS is responsible to send / receive Data Packages and forward them to TRBOnet RadioServer.

DDMS (aka Presence Notifier) is responsible for ARS and notifies TRBOnet RadioServer when a radio is turned on/off. For more details see «[NAI_RM_Training_v02.pdf](#)».

All the repeaters in all sites should be available for TRBOnet RadioServer, which normally required Port Forwarding rules on routers. For more details see «[MOTOTRBO Linked Capacity Plus \(LCP\) - HP MSR 20-20 Router Configuration Guide](#)».

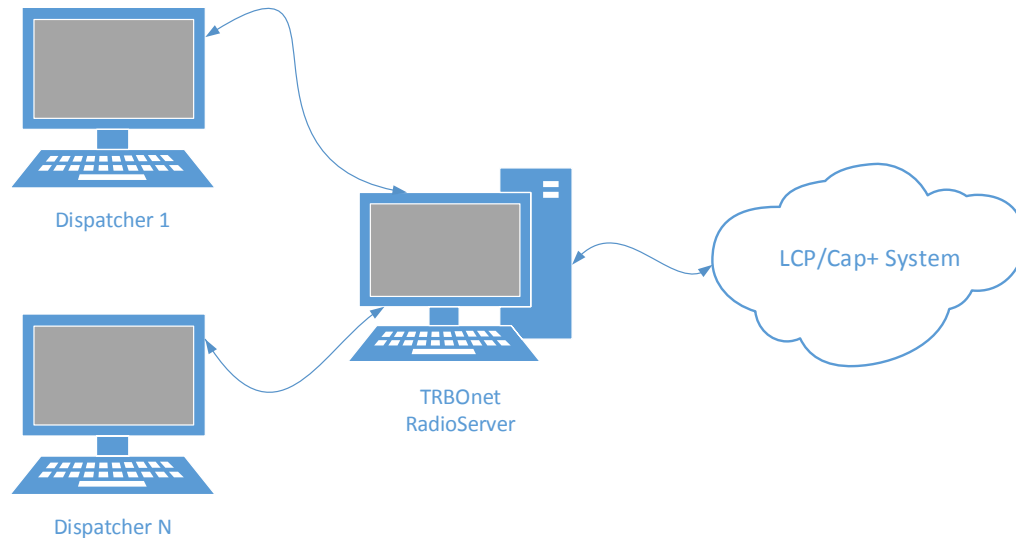
Single PC Installation

TRBOnet RadioServer and Dispatcher software can be installed on a single computer.



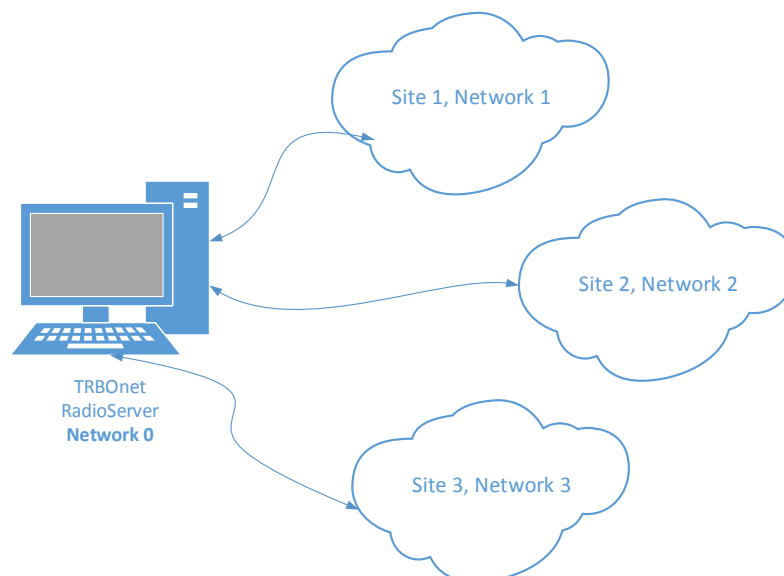
Client-Server Installation

For the systems with 2 and more dispatch positions, it is recommended to have a dedicated server computer (could be a virtual machine).



One TRBOnet RadioServer and up to 30 Dispatchers.

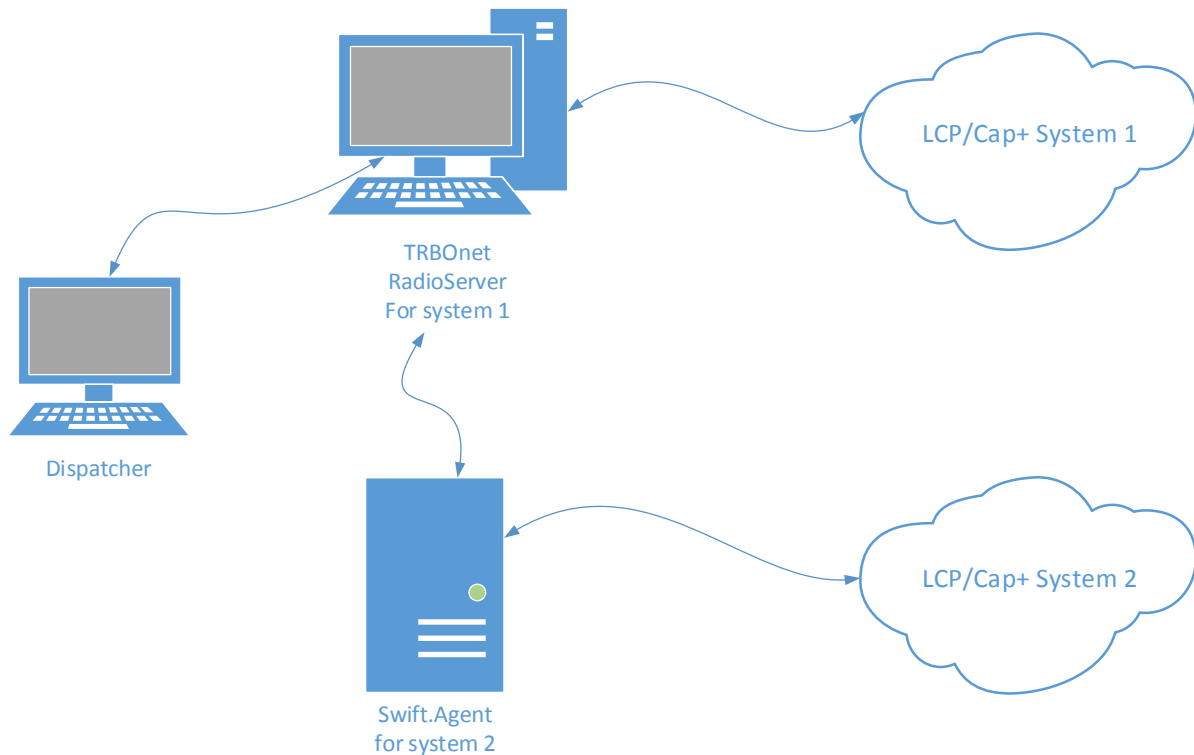
TRBOnet RadioServer and all the LCP sites must be in different networks, behind routers:



Use the recommended Routers only.

IMPORTANT

- One TRBOnet RadioServer computer is for one LCP System;
- It is possible to connect two or more LCP systems (System Bridging);
- TRBOnet System Bridging supports Group and Individual Calls;
- It is possible to use a Virtual machine as a Server.

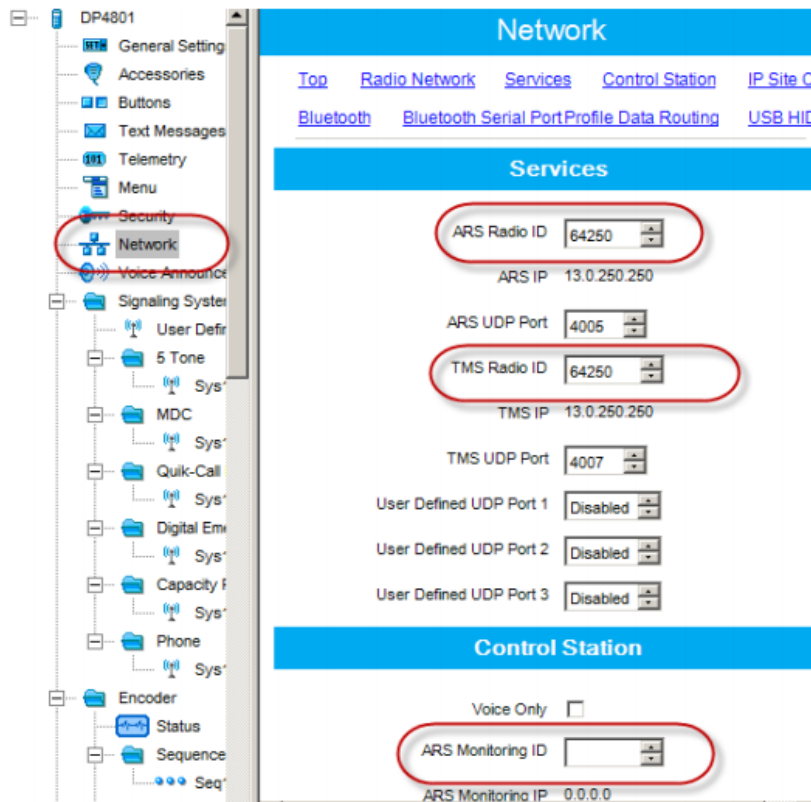


Limitations

- Logging of Radio-to-Radio TEXT is **NOT SUPPORTED**
- Phone Interconnect available with some limitations. For more details see the following [article](#)
- Local Talk Group IDs must be unique per a system

Radio Subscriber Configuration

Network Settings



Network

[Top](#) [Radio Network](#) [Services](#) [Control Station](#) [IP Site C](#)

[Bluetooth](#) [Bluetooth Serial Port Profile Data Routing](#) [USB HIC](#)

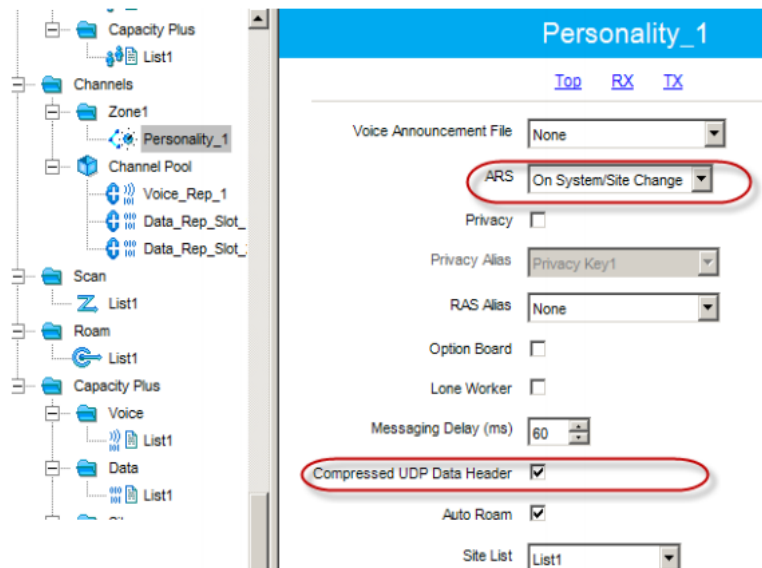
Services

ARS Radio ID: 64250
 ARS IP: 13.0.250.250
 ARS UDP Port: 4005
 TMS Radio ID: 64250
 TMS IP: 13.0.250.250
 TMS UDP Port: 4007
 User Defined UDP Port 1: Disabled
 User Defined UDP Port 2: Disabled
 User Defined UDP Port 3: Disabled

Control Station

Voice Only: ☐
 ARS Monitoring ID:
 ARS Monitoring IP: 0.0.0.0

Personality Settings – 1

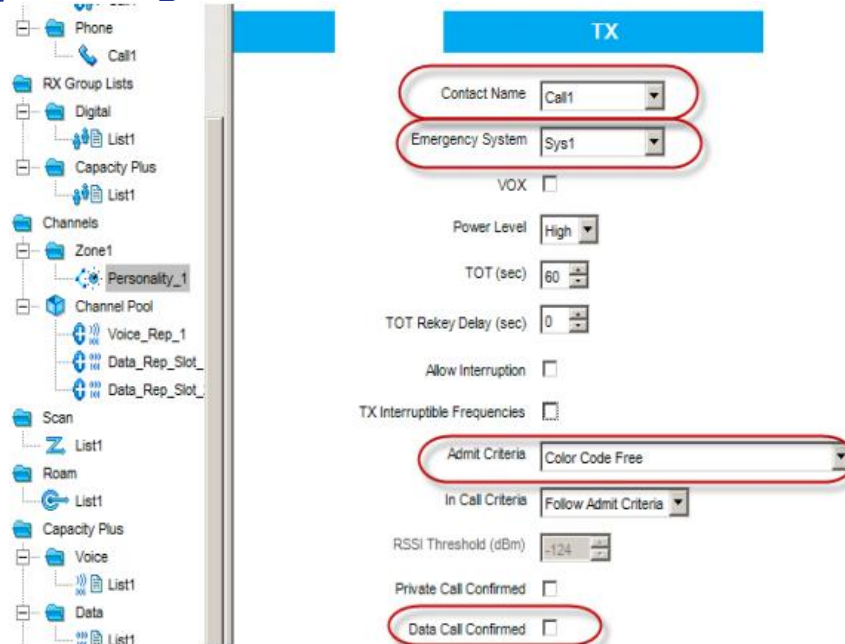


Personality_1

[Top](#) [RX](#) [TX](#)

Voice Announcement File: None
 ARS: On System/Site Change
 Privacy: ☐
 Privacy Alias: Privacy Key1
 RAS Alias: None
 Option Board: ☐
 Lone Worker: ☐
 Messaging Delay (ms): 60
 Compressed UDP Data Header: ☒
 Auto Roam: ☒
 Site List: List1

Personality Settings – 2

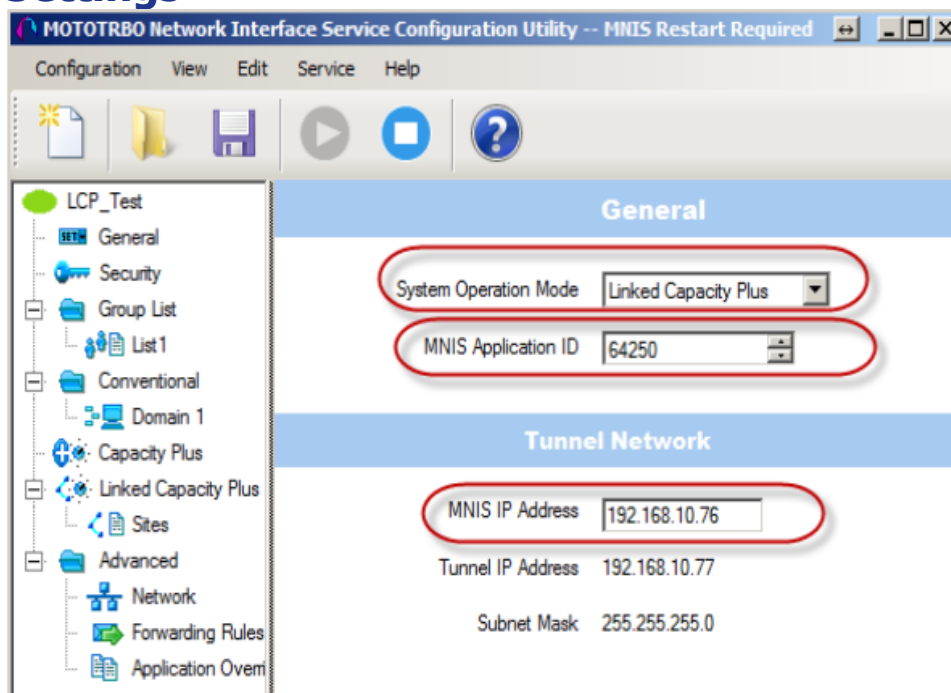


The screenshot shows the 'Personality Settings – 2' window. On the left is a tree view with categories like Phone, RX Group Lists, Digital, Capacity Plus, Channels, Zone1, Channel Pool, Scan, Roam, Capacity Plus, Voice, and Data. The 'Personality_1' item under 'Zone1' is selected. The main area is titled 'TX' and contains the following settings:

- Contact Name:
- Emergency System:
- VOX: ☐
- Power Level:
- TOT (sec):
- TOT Rekey Delay (sec):
- Allow Interruption: ☐
- TX Interruptible Frequencies: ☐
- Admit Criteria:
- In Call Criteria:
- RSSI Threshold (dBm):
- Private Call Confirmed: ☐
- Data Call Confirmed: ☐

MNIS and DDMS Settings

General Settings



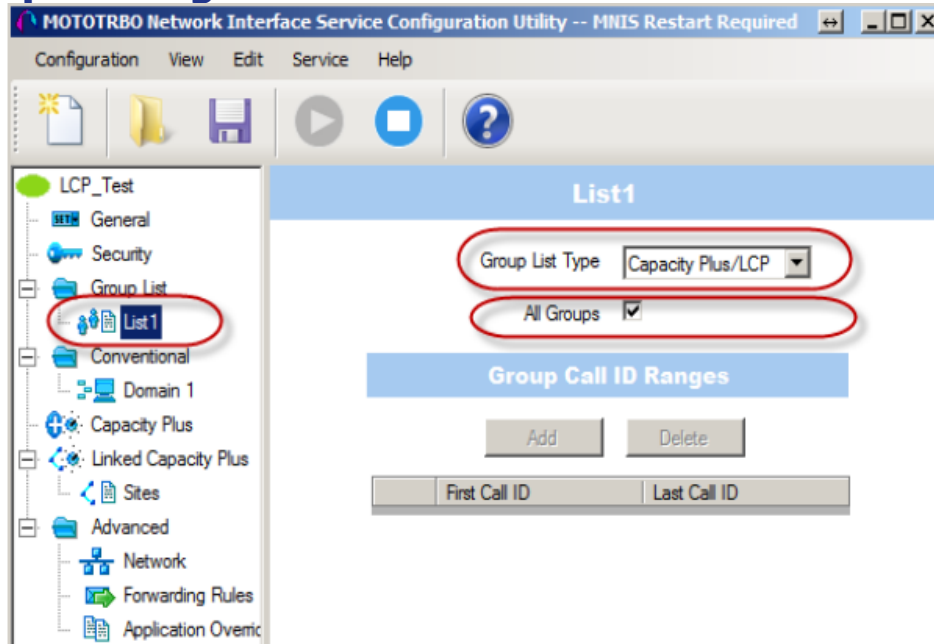
The screenshot shows the 'MOTOTRBO Network Interface Service Configuration Utility -- MNIS Restart Required' window. The left pane shows a tree view with categories like LCP_Test, General, Security, Group List, Conventional, Domain 1, Capacity Plus, Linked Capacity Plus, Sites, Advanced, Network, Forwarding Rules, and Application Over. The 'General' item is selected. The main area is titled 'General' and contains the following settings:

- System Operation Mode:
- MNIS Application ID:

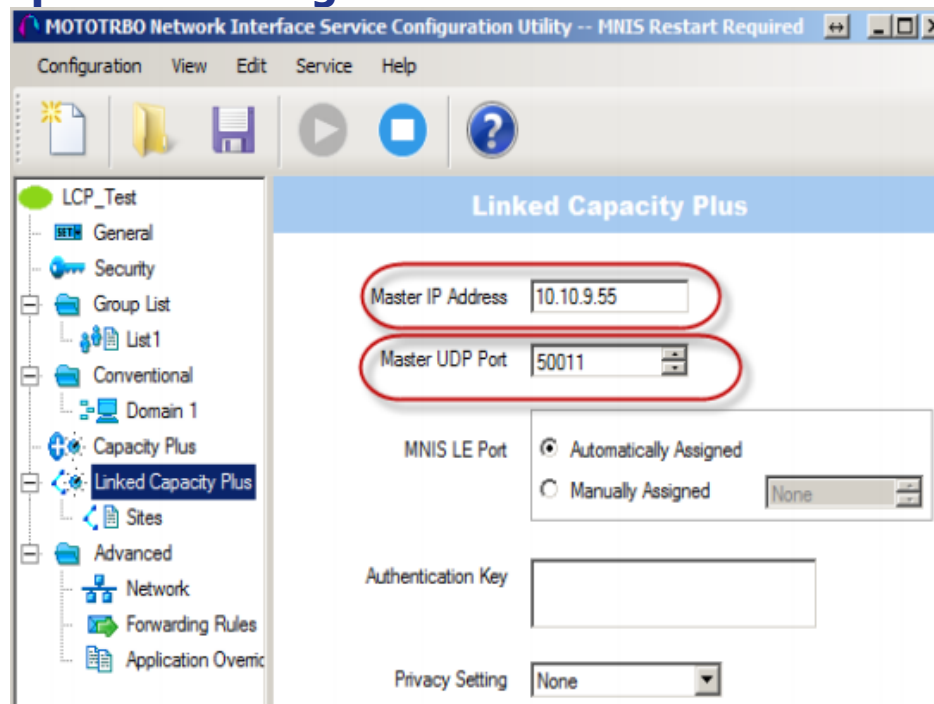
Below the 'General' section is the 'Tunnel Network' section with the following settings:

- MNIS IP Address:
- Tunnel IP Address: 192.168.10.77
- Subnet Mask: 255.255.255.0

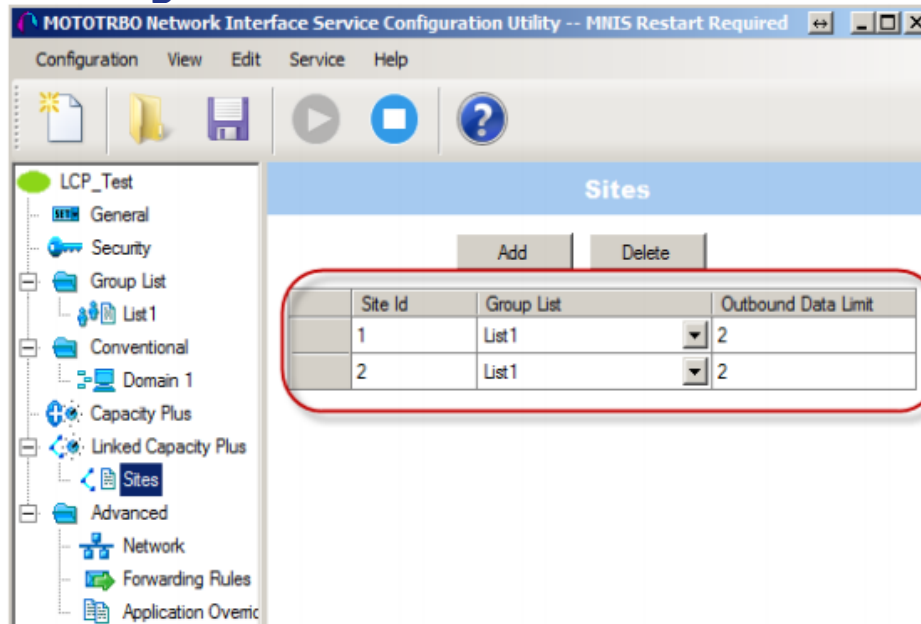
Talk Group Settings



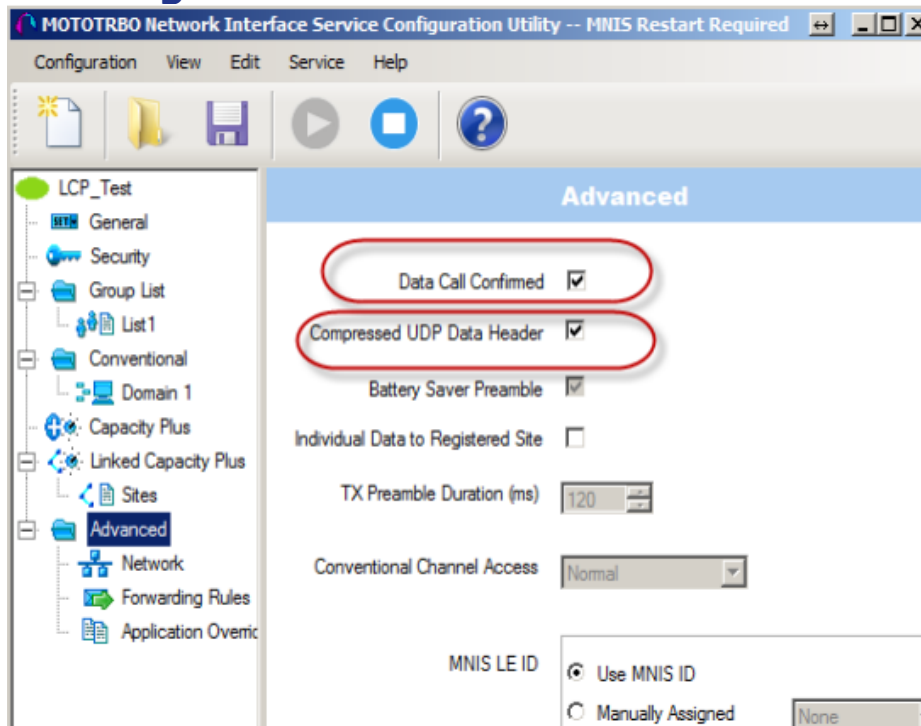
Master Repeater Settings



LCP Sites Settings

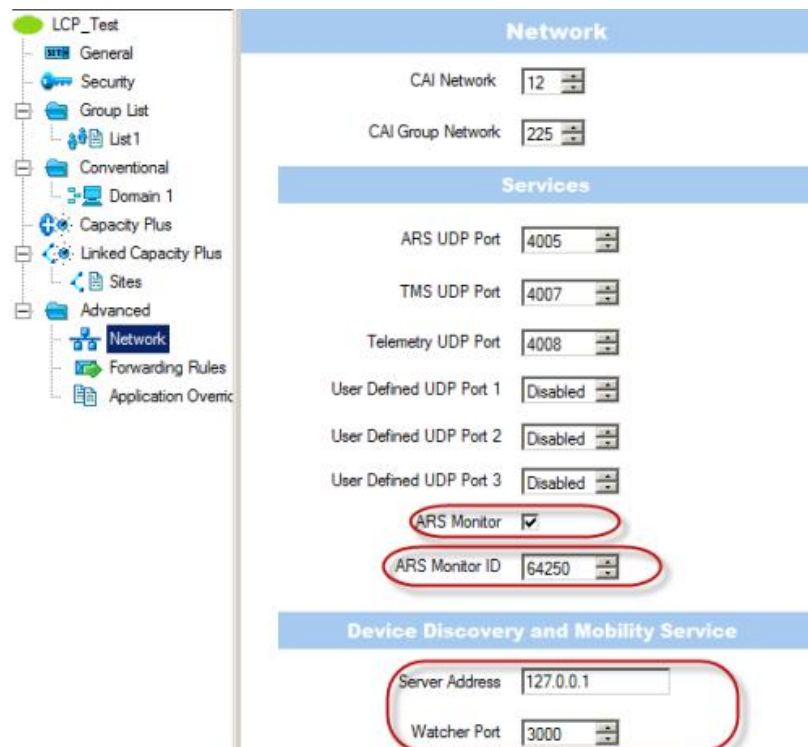


Advanced Settings



Network Settings

Note: ARS Monitor – check to enable ARS requests for MNIS.



Network

CAI Network: 12

CAI Group Network: 225

Services

ARS UDP Port: 4005

TMS UDP Port: 4007

Telemetry UDP Port: 4008

User Defined UDP Port 1: Disabled

User Defined UDP Port 2: Disabled

User Defined UDP Port 3: Disabled

ARS Monitor: ☒

ARS Monitor ID: 64250

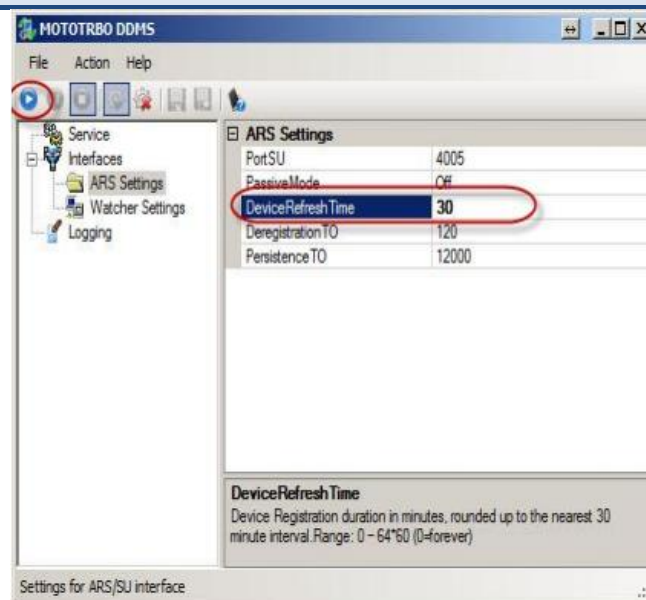
Device Discovery and Mobility Service

Server Address: 127.0.0.1

Watcher Port: 3000

DDMS Settings

Note: DeviceRefreshTime – how often radios should send ARS to TRBOnet Dispatch Software. The value depends on number of radios and channels.



MOTOTRBO DDMS

File Action Help

Service

Interfaces

ARS Settings

Watcher Settings

Logging

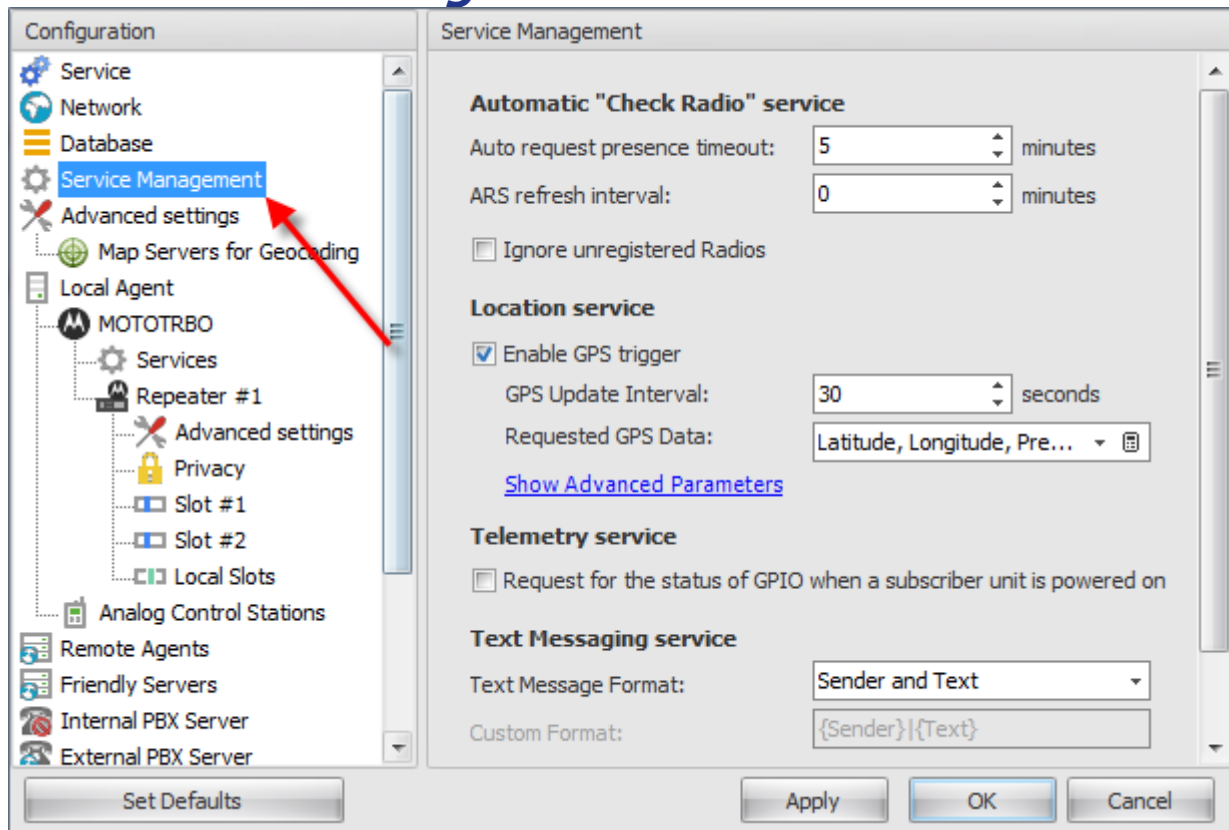
ARS Settings

PortSU	4005
PassiveMode	Off
DeviceRefreshTime	30
DeregistrationTO	120
PersistenceTO	12000

DeviceRefreshTime
 Device Registration duration in minutes, rounded up to the nearest 30 minute interval. Range: 0 - 64*60 (0=forever)

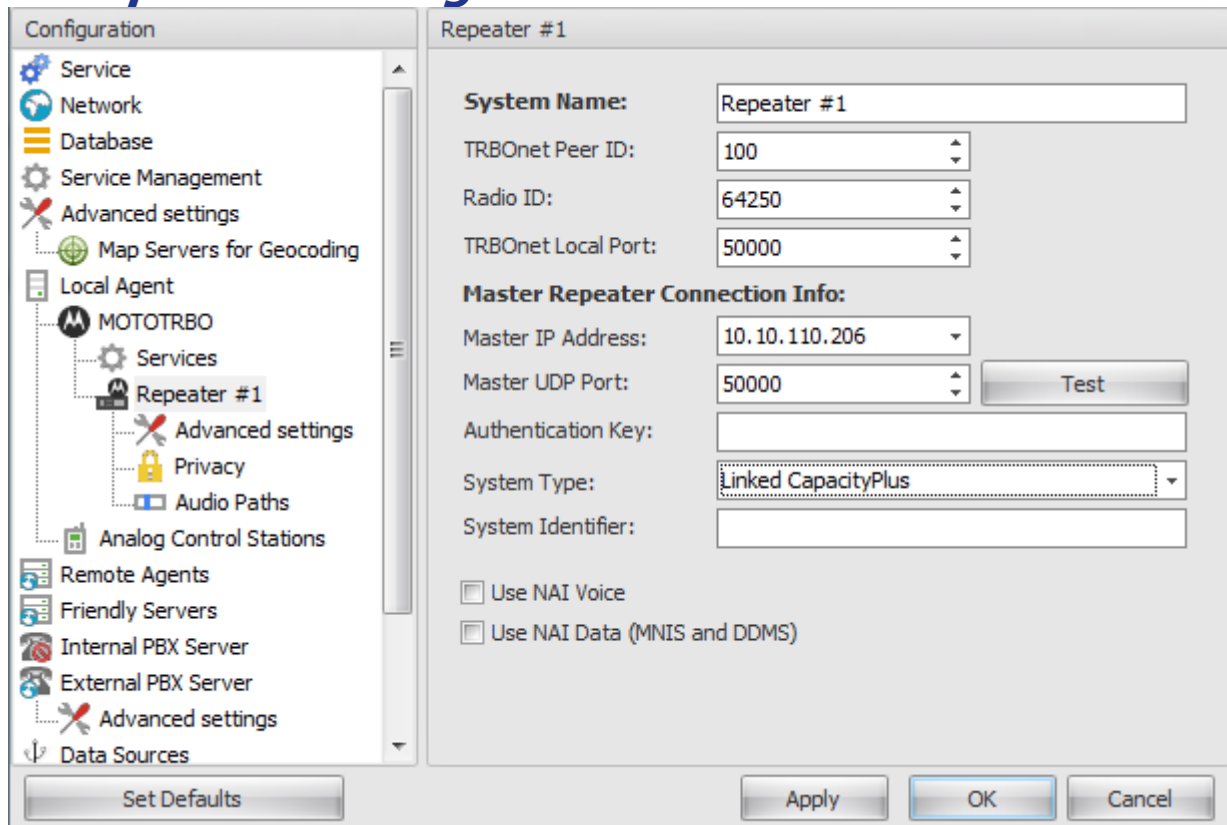
Settings for ARS/SU interface

ARS TRBOnet Settings



- **Auto Request Presence** – for NAI systems works as Radio Check command.
- **Subscriber ARS** – is not used for NAI systems. Should be set as “0”. The value is set in DDMS (DeviceRefreshTime).

LCP Repeater Settings



Configuration

- Service
- Network
- Database
- Service Management
- Advanced settings
- Map Servers for Geocoding
- Local Agent
 - MOTOTRBO
 - Services
 - Repeater #1**
 - Advanced settings
 - Privacy
 - Audio Paths
- Analog Control Stations
- Remote Agents
- Friendly Servers
- Internal PBX Server
- External PBX Server
- Advanced settings
- Data Sources

Repeater #1

System Name: Repeater #1

TRBOnet Peer ID: 100

Radio ID: 64250

TRBOnet Local Port: 50000

Master Repeater Connection Info:

Master IP Address: 10.10.110.206

Master UDP Port: 50000 Test

Authentication Key:

System Type: Linked CapacityPlus

System Identifier:

☐ Use NAI Voice

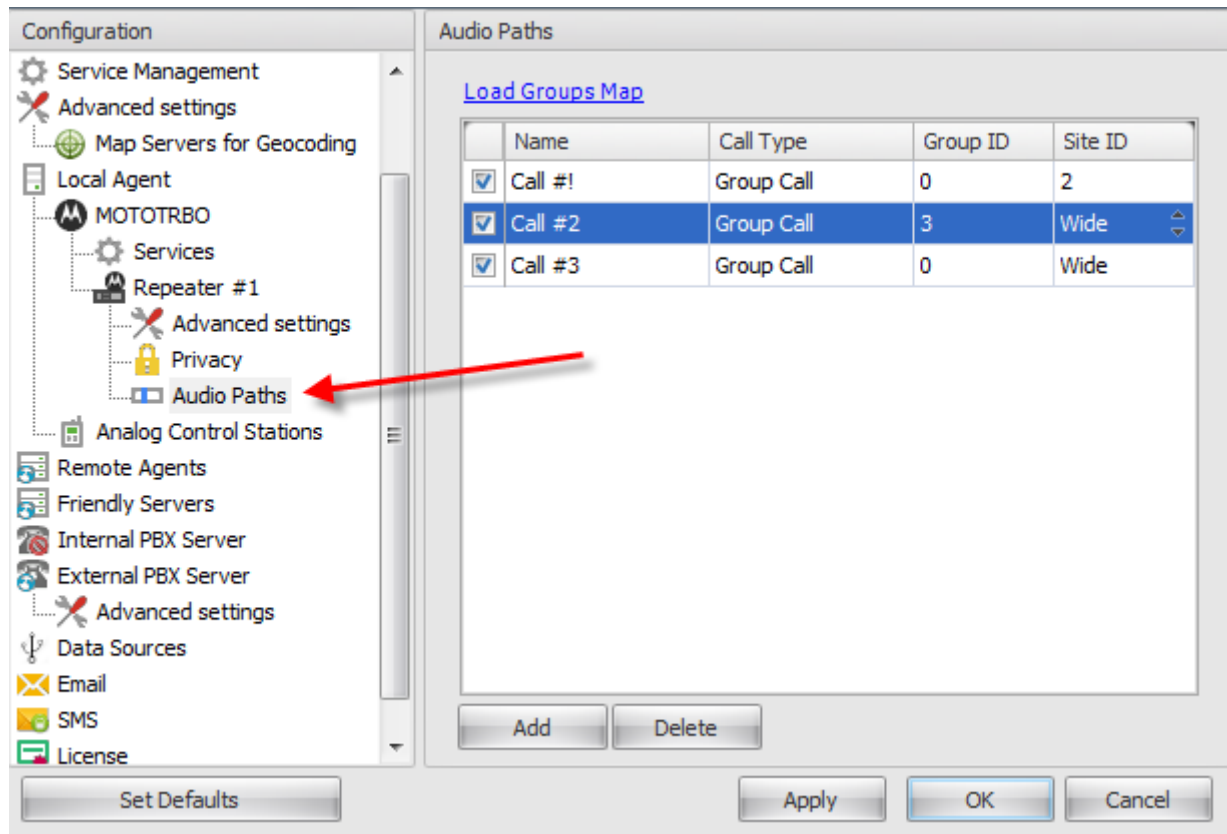
☐ Use NAI Data (MNIS and DDMS)

Set Defaults Apply OK Cancel

Special settings:

- **TRBOnet Peer ID** – any unique value
- **Radio ID** – the default TRBOnet ID
- **TRBOnet Local Port** – any free port on PC

Audio Paths



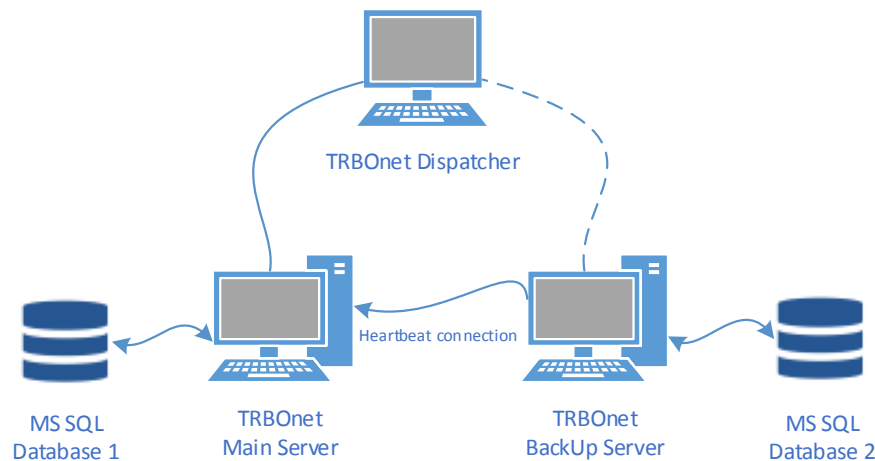
Special settings

- Load Groups from Master Repeater;
- Add Local Groups manually.

Appendix I: Backup Server

TRBOnet Server supports backup configuration which allows to have a working copy of server. Backup configuration allows to switch smoothly between working servers in case of failure for Dispatch Consoles.

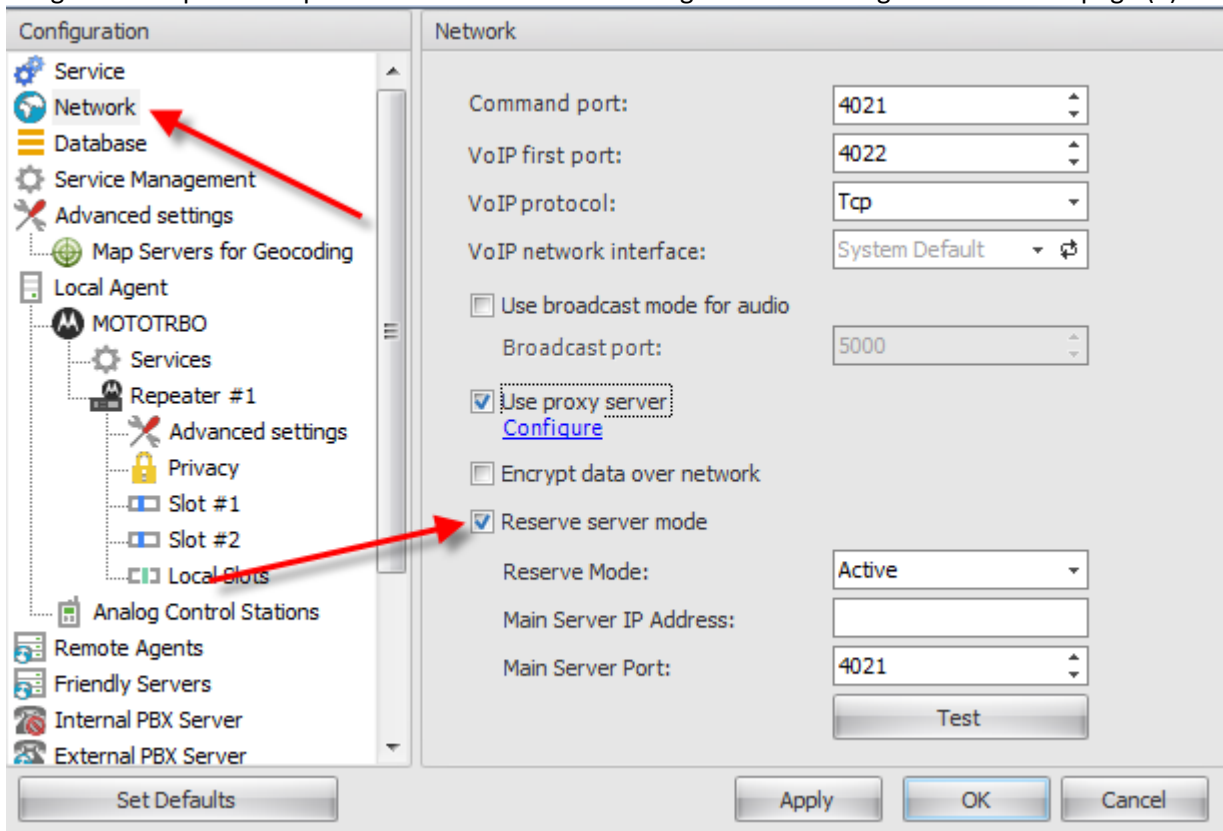
Backup configuration overview:



- Main and Backup Server configured identically
- Backup Server is in “PASSIVE” mode (i.e., ARS confirmation disabled, Geofencing disabled etc.)
- Backup Server monitors Main Server status
- Dispatcher connected to Main and Backup Servers
- In case of the Main Server failure:
 - ✓ Dispatcher connects to Backup Server automatically;
 - ✓ Backup Server becomes “ACTIVE”;
- Once Main Server comes back online, Dispatcher should reconnect to Main Server manually;
- Main and Backup Server do not exchange data.

TRBOnet Backup Server Configuration

To configure Backup Server open TRBOnet RadioServer Configurator and navigate to **Network** page (1):



Select **Reserve server mode** (2) and set the following reserve server parameters:

- **Reserve Mode** – select mode for a backup server.
- **Main Server IP Address** – type the IP address of main server;
- **Main server port** – should be set to the “Command Port” value of Main server.

Passive Reserve Mode

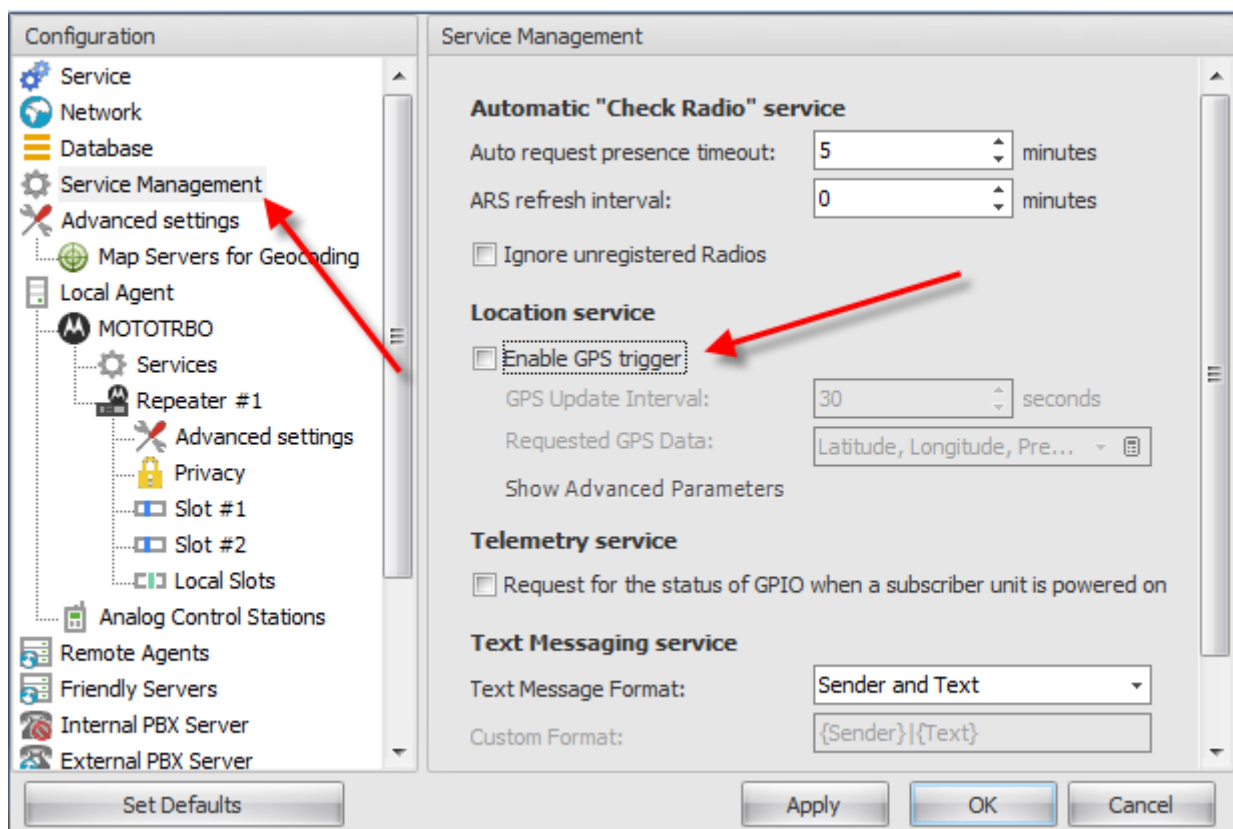
In **Passive Reserve Mode** Backup Server saves data in the Backup Server database from the moment it was running. Main server's database is not available for Backup server and both of them handles each own database. In nutshell: there is no data replication between servers. If you need to get data from Main server which were stored before backup, you will need to restore the database. Nevertheless, this mode is easier to configure and allows continuing to work, but without access to old data.

Active Reserve Mode

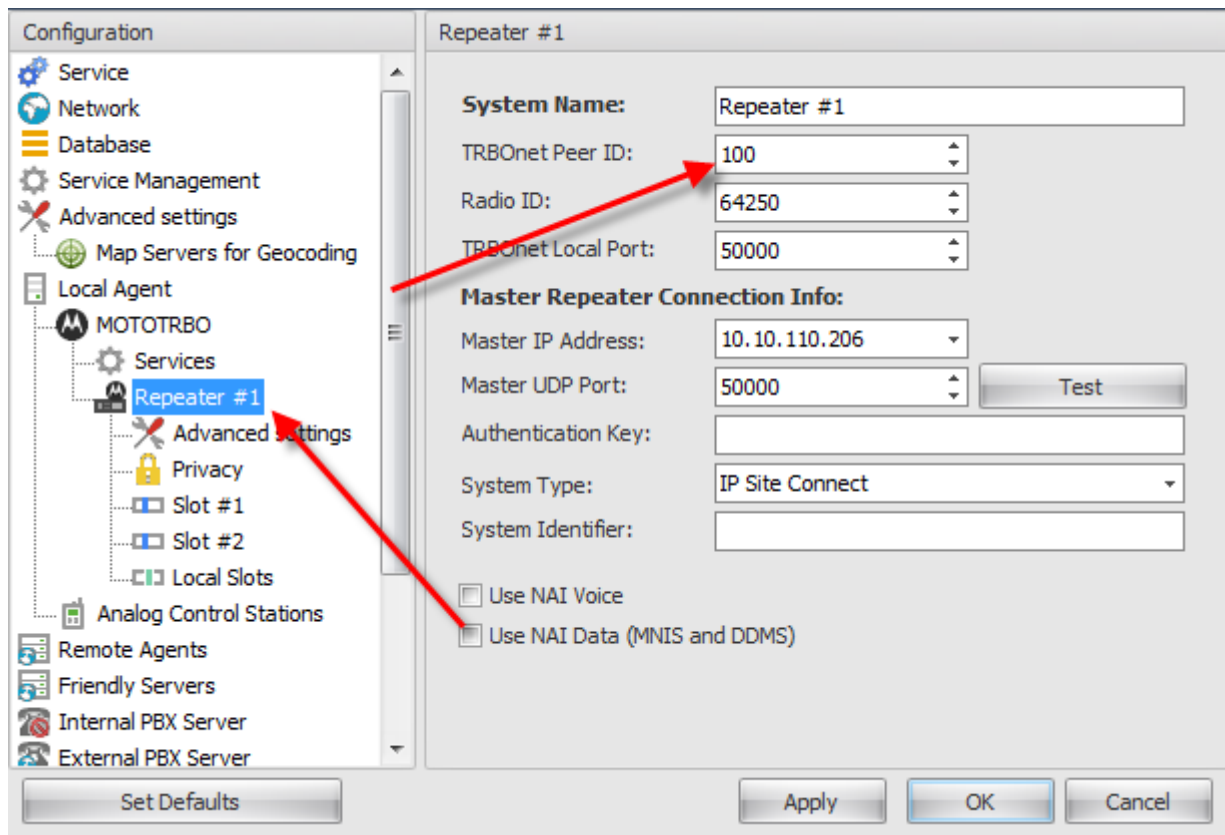
Active Reserve Mode requires special restrictions (see [Ошибка! Неверная ссылка закладки.](#) section). Backup Server Database in Active Reserve Mode duplicates Main Server Database, e.g. you are able to view and work with Main Server data during Backup Server in Active Reserve Mode running.

Restrictions for Active Reserve Mode

1. Go to **Service Management** and uncheck **Enable GPS trigger** backup server. In case when GPS trigger is enabled for Backup server, a radio tries to send GPS data to Main and Backup servers what corrupts GPS data:



- Go to repeater settings and make sure that **TRBOnet Peer ID** of Backup Server differs from the one set for Main Server. Each TRBOnet Server must have a unique peer ID in the radio system:



Configuration

- Service
- Network
- Database
- Service Management
- Advanced settings
- Map Servers for Geocoding
- Local Agent
 - MOTOTRBO
 - Services
 - Repeater #1**
 - Advanced settings
 - Privacy
 - Slot #1
 - Slot #2
 - Local Slots
- Analog Control Stations
- Remote Agents
- Friendly Servers
- Internal PBX Server
- External PBX Server

Repeater #1

System Name: Repeater #1

TRBOnet Peer ID: 100

Radio ID: 64250

TRBOnet Local Port: 50000

Master Repeater Connection Info:

Master IP Address: 10.10.110.206

Master UDP Port: 50000 **Test**

Authentication Key:

System Type: IP Site Connect

System Identifier:

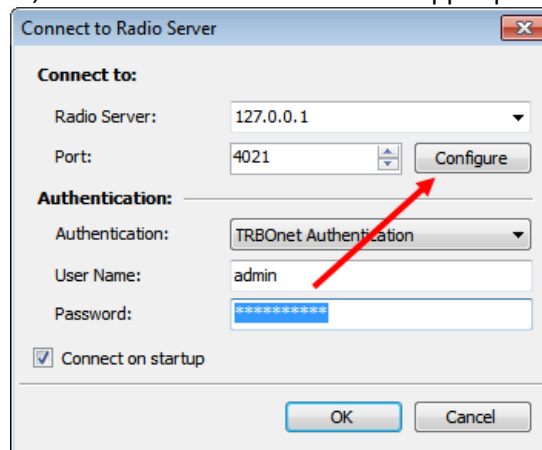
☐ Use NAI Voice

☐ Use NAI Data (MNIS and DDMS)

Buttons: Set Defaults, Apply, OK, Cancel

Dispatch Console Configuration

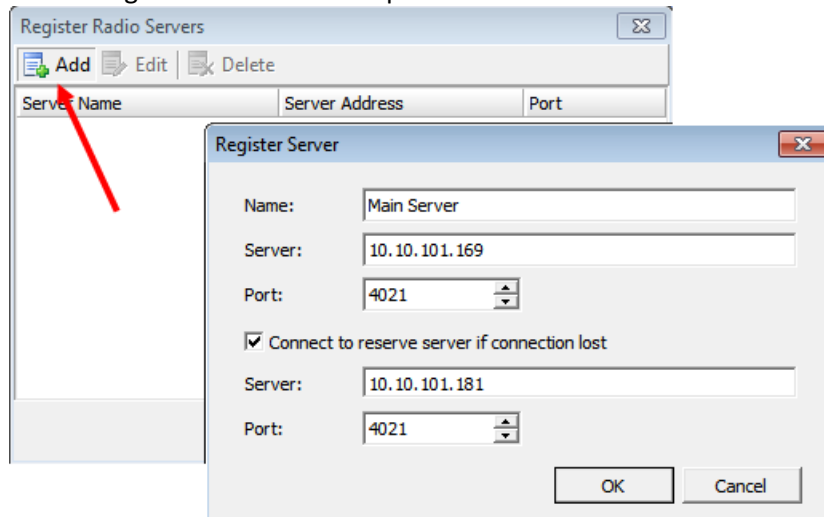
To add Backup Server to the Radio Servers list, launch TRBOnet Dispatch Console to open Connect to Radio Server window or go to **File Menu** , **Connect to RadioServer** in the upper part of Dispatch Console:



The 'Connect to Radio Server' dialog box contains the following fields and controls:

- Connect to:**
 - Radio Server: 127.0.0.1
 - Port: 4021
 - Configure** button
- Authentication:**
 - Authentication: TRBOnet Authentication
 - User Name: admin
 - Password: [masked]
- ☒ Connect on startup
- OK** and **Cancel** buttons at the bottom.

Click «**Configure**» button to register main and backup RadioServers:



The 'Register Radio Servers' dialog box shows a table with columns: Server Name, Server Address, and Port. The 'Add' button is highlighted with a red arrow. The 'Register Server' dialog box is open, showing the following fields:

- Name:** Main Server
- Server:** 10.10.101.169
- Port:** 4021
- ☒ Connect to reserve server if connection lost
- Server:** 10.10.101.181
- Port:** 4021
- OK** and **Cancel** buttons at the bottom.

Click «**Add**» button to add new TRBOnet RadioServer:

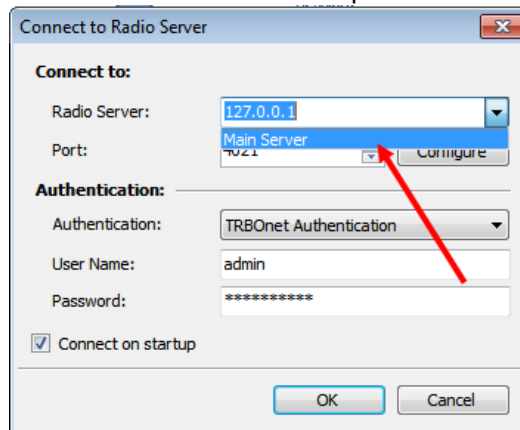
- **Name** – select name for new Main Server
- **Server** – input the Main Server IP Address;
- **Port** – specify the command port of the Main server;
- **Connect to reserve server if connection lost** – select to allow Main Server to connect to a backup server;
- **Server** – input the backup server IP Address;
- **Port** – select the command port of Backup Server. Select Backup Server port depending on Backup Server configuration in Server Configurator.

Note: To register more backup servers, just add more server with the same “Main server” values and new backup servers.

Click «**OK**» to save settings and close dialog window.

Console Connection to Main and Backup Servers

Go to **File** Menu , **Connect to RadioServer** and select from dropdown list the created server:



Hit **“OK”** button to connect to Main server. Now you are connected to the Main server, in case of lost connection to the Main server the Console will try to restore connection within 30 seconds. After 30 seconds passed the console will change connection to the Backup server automatically. When Main server is restored, the Dispatch Console will reconnect to the Main server automatically.